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THE EDUCATIONAL RESEARCH INVOLVEMENT AND CAPABILITIES OF INSTITUTIONS FOR TEACHER EDUCATION. FINAL REPORT.

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THIS SURVEY OF THE 727 MEMBERS OF THE AMERICAN ASSOCIATION OF COLLEGES FOR TEACHER EDUCATION (AACTE) DETERMINED THEIR INVOLVEMENT IN AND CAPABILITIES FOR EDUCATIONAL RESEARCH. USABLE REPLIES RECEIVED FROM 303 PERSONS WERE CODED AND ANALYZED. UNIVERSITIES WERE MOST HEAVILY INVOLVED IN EDUCATIONAL RESEARCH, USUALLY COMMITTING DOUBLE OR TRIPLE THE RESOURCES COMMITTED BY LIBERAL ARTS COLLEGES, TEACHERS COLLEGES, OR "OTHER" INSTITUTIONS. ALL INSTITUTIONAL CATEGORIES WERE FOUND TO HAVE CONVERTIBLE RESOURCES OF FACULTY, SPACE AND EQUIPMENT WHICH COULD BE INVESTED IN RESEARCH. SMALLER INSTITUTIONS GAVE EVIDENCE OF POTENTIAL FOR SIGNIFICANT RESEARCH IF GIVEN DEVELOPMENTAL AND FINANCIAL ASSISTANCE. RESEARCH WAS MOST OFTEN BLOCKED BY LIMITATIONS OF FACULTY TIME, WITH MONEY SHORTAGES LISTED SECOND. THE FEDERAL GOVERNMENT HAS BEEN THE CHIEF SOURCE OF RESEARCH FUNDS, AND OF FUTURE RESEARCH FUNDS. RESEARCH IS A PRIMARY FUNCTION FOR A FEW FACULTY MEMBERS, BUT A LIMITED NUMBER WILL BE HIRED PRIMARILY FOR RESEARCH IN 1967-68. ABOUT ONE-TENTH OF THE RESPONDENTS REPORTED TRAINING PROGRAMS FOR EDUCATIONAL RESEARCHERS, BUT FEWER THAN ONE-FIFTH OF THOSE NOT HAVING SUCH PROGRAMS PLAN THEM IN THE NEAR FUTURE. TEACHER EDUCATION, LEARNING PROCESSES, AND CURRICULUM STUDIES IN THAT ORDER ARE THE TOP PRIORITY AREAS FOR RESEARCH. A NATIONAL PROGRAM FOR RESEARCHER TRAINING WAS RECOMMENDED, ALONG WITH GREATER INTERDISCIPLINARY COOPERATION AND MORE COMPREHENSIVE FINANCING FOR EDUCATIONAL RESEARCH AT ALL SCHOOL LEVELS.

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June 1967

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
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Project No. 6-2032
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Richard J. Puffer

June 1967

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Evanston, Illinois

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TABLE OF CONTENTS

CHAPTER PAGE

I. BACKGROUND OF THE STUDY 1

Scope of the Study 2

The Problem 3

Definition of Terms Used 4

II. REVIEW OF THE LITERATURE 7

The Status of Research 9

Research Quality and Production 11

Supply of Researchers 12

Training Researchers 13

Variables affecting the production of researchers 15

Thirty-one Outstanding Researchers 17

Their graduate programs 19

Quality of research courses in education 20

Environmental Requisites for Training Researchers 21

Current Needs for and Training of Research Personnel 22

A New Plan for Training Educational Researchers 25

CHAPTER PAGE

Summary 28

III. THE CONSTRUCTION AND USE OF THE SURVEY QUESTIONNAIRE 31

The Format of the Instrument 31

Schedule I: Human Resources for Educational Research 32

Schedule II: Physical Facilities for Educational Research 34

Schedule III: Financial Resources for Educational Research 35

Schedule IV: Interdisciplinary Resources for Educational Research 37

Schedule V: Policies, Attitudes and Aspirations of the Institutions Toward Educational Research 38

Selection of Survey Institutions 41

Summary 43

IV. RESULTS OF THE SURVEY 45

Institutional Data 45

Human Resources for Educational Research . . 51

Faculty Size 51

Qualified Researchers 54

Full-time educational researchers 56

Part-time educational researchers 56

CHAPTER PAGE

Administrative, Secretarial and Clerical Employees 59
  Full-time research employees 61
  Part-time research employees 63
Student Research Assistance 68
Faculty Interest in Research 71
  Faculty membership in research associations 71
  Faculty affiliates with government research centers 75
Institutional Commitment to the Training of Researchers 81
Employment of New Educational Researchers 83
Summary of Human Resources for Educational Research 86
Physical Facilities Resources for Educational Research 88
  Electronic Data Processing 88
    Computer utilization 92
    Additional computers 92
  On-campus Schools 94
    Research projects in on-campus schools 96

CHAPTER PAGE

Research Projects in Off-Campus School Systems 96
Shortage Blocking Research Assistance to School Systems 100
Working Space for Research 102
  Research space in new buildings . . . 105
Summary of Physical Resources for Education Research 105
Financial Resources for Educational Research 108
  Research Budgets 109
  Sources of Research Funds 111
  Expenditures for Research 114
  Expenditure for Research Travel 116
  Future Financing for Educational Research 119
    Additional research funds 121
  Summary of Financial Resources for Educational Research 123
Interdisciplinary Resources for Educational Research 124
  Joint Faculty Appointments 125
  Budgetary Support for Faculty Members in Other Departments 130

CHAPTER PAGE

Educational Research Programs Found in Other Departments 132
Joint Programs in Research 135
Summary of Interdisciplinary Resources for Educational Research 135
Policies, Attitudes and Aspirations of the Institutions Toward Educational Research 138
Released Time for Faculty Research . . 139
Faculty Sponsored Research Meetings . . 141
Faculty Committees for Educational Research 144
Major Problems Blocking Educational Research 147
Importance of the Research Function . . 148
Reasons for the Under Emphasis Upon Research 150
Summary of Institutional Politices, Attitudes and Aspirations Concerning Educational Research 153
General and Supplemental Information . . . 154
Research Projects Currently Underway . . 155
Preferred Sources for Educational Research Funds 157
Research Funds 157

CHAPTER PAGE

Priorities for Educational Research . . 158

Developmental Research 160

Summary of General and Supplemental Information 164

V. SUMMARY 166

Conclusions 171

Recommendations 175

Expanding Federal Leadership and Support 176

Expanding Institutional Involvement . . . 178

Expanding Faculty Resources 180

General Recommendations 182

BIBLIOGRAPHY 184

APPENDIX 186

LIST OF TABLES

TABLE		PAGE
I.	Respondent Institutions by Location and Type	46
II.	Respondent Institutions by Size and Type	47
III.	Distribution of Questionnaires and Replies by Location	49
IV.	Comparison of Types of Respondent Institutions to Nationwide Percentages	50
V.	Comparison of Respondents by Size with Nationwide Norms	52
VI.	Total Number of Faculty on School of Education Budget by Type of Institution	53
VII.	Faculty Considered Qualified as Educational Researchers by Type of Institution	55
VIII.	Budgeted Full-Time Educational Researchers	57
IX.	Budgeted Part-Time Educational Researchers	58
X.	Estimated Full-Time Equivalent Research Time Spent by Faculty	60
XI.	Administrative, Secretarial and Clerical Employees by Type of Institution	62
XII.	Budget Full-Time Research Employees	64
XIII.	Full-Time Employees Budgeted Partly for Research	65

TABLE PAGE

XIV. Part-Time Employees Budgeted Wholly for Research 66

XV. Part-Time Employees Budgeted Partly for Research 67

XVI. Estimated Full-Time Equivalent of Employee Time Spent on Research by Type of Institution 69

XVII. Number of Students Employed in Research Work by Type of Institution 72

XVIII. Graduate Students Employed in Research Work by Type of Institution 73

XIX. Undergraduate Students Employed on Research. 74

XX. Faculty Membership in Research Association by Type of Institution 76

XXI. Faculty Holding Office or Committee Membership in a Research Association 77

XXII. Faculty Currently Affiliated with Regional Research Labs by Type of Institution . . . 79

XXIII. Faculty Currently Affiliated with Research/ Development Centers by Type of Institution 80

XXIV. Programs to Develop Institutions with Faculty as Educational Researchers 82

XXV. Institutions Planning Programs to Develop Educational Researchers 83

TABLE PAGE

XXVI. Institutions Planning to Hire Faculty for Educational Research 84

XXVII. Faculty to be Hired for Full-Time Research by Type of Institution 85

XXVIII. Faculty to be Hired for Part-Time Research by Type of Institution 87

XXIX. High Speed Computers in Operation on Campus 90

XXX. Computers Available to Staff and Students on Campus 91

XXXI. Research Projects Using Computers in the Last Year 93

XXXII. Institutions Planning to Arrange Availability of More Computers to Staff and Students . 94

XXXIII. Institutions Operating On-Campus Schools . . 95

XXXIV. Research Projects Conducted in On-Campus Schools Last Year 97

XXXV. Institutions Conducting Off-Campus Research Projects in School Systems in the Last Year 98

XXXVI. Research Projects Conducted in School Systems Off-Campus Last Year 99

XXXVII. Institutions Forced to Refuse Research Help to School Systems Because of a Shortage of Funds 101

TABLE PAGE

XXXVIII. Institutions Forced to Refuse Research Help to School Systems Because of a Shortage of Faculty 101

XXXIV. Percentage of Building Space Presently Devoted to Educational Research 103

XL. Percentage of Potential Research Space in Buildings not Presently so Assigned . . . 104

XLI. Building Programs Underway for Departments of Education 106

XLII. Percentage of New Building Space to Be Devoted to Research 107

XLIII. Percentage of Budget Devoted to Research by Schools of Education 110

XLIV. Mean Percentages of Research Funds Received from Various Sources 113

XLV. Mean Percentage Expenditures for Research Salaries, Equipment, Facilities and Services 115

XLVI. Expenditures for Travel to Research Conferences 117

XLVII. Expenditures for Travel to Discuss Research Proposals 118

XLVIII. Institutions Planning to Expand the Financial Base for Research 120

TABLE PAGE

XLIX. Mean Estimated Percentage Increase by Source of Total Additional Research Funds Projected 122

L. Education Faculty Holding Joint Appointment in One Other Department or Discipline . . 126

LI. Education Faculty Holding Joint Appointments in Two Other Departments or Disciplines . 127

LII. Other Faculty Holding Joint Appointment in School or Department of Education 129

LIII. Salary Support for Other Faculty by Schools or Departments of Education 130

LIV. Other Faculty Partly Supported by Schools or Departments of Education 131

LV. Institutions with Other Departments Having Programs in Educational Research 133

LVI. Other Departments Which Have Programs in Educational Research 134

LVII. Joint Programs in Educational Research . . . 136

LVIII. Educational Research Programs Separate from School or Department of Education 137

LIX. Faculty Released from Teaching for Research. 140

LX. Faculty Time Released if Appointed to Office in a National Research Association 141

LXI. Faculty Sponsored Open Research Seminar in Last Year 142

TABLE PAGE

LXII. Research Seminars, Colloquia or Speeches Sponsored in the Last Year 143

LXIII. Faculty Committees for Educational Research Activities 145

LXIV. Intra-Institutional Research Studies of Educational Programs 146

LXV. Major Problems Confronted in Attempting Research 149

LXVI. Institutions Giving Sufficient Weight to Educational Research 150

LXVII. Major Reasons Insufficient Weight Is Given to Educational Research Function 152

LXVIII. Research Projects Currently Underway in Department or School of Education 156

LXIX. Sources from Which Most Educational Research Funds Ought to Come 159

LXX. Priorities Assigned Various Topics for Educational Research 161

LXXI. Extent to Which Schools and Departments of Education Are Involved in Developmental Research 163

CHAPTER I

BACKGROUND OF THE STUDY

This study was originally suggested by Lindley Stiles of Northwestern University who, during the years of his leadership in education, has noted that there has been no comprehensive study concerning the educational research commitment of institutions of higher learning. The advent of the National Defense Education Act and the Co-operative Research Program of the United States Office of Education has encouraged the study of researchers themselves, their background and training. Until now, however, only one nationwide study has been conducted which concerned itself with the institutional environment as well as the researcher. Because the earlier study was limited to the 107 largest institutions (those which offered a doctorate), it did not have the breadth necessary to fully assess our national educational research potential.

The title of this study speaks for itself. It is an analysis of the faculty, funds, and facilities which institutions have committed to educational research, or are planning to commit in the near future. Further, it is an attempt to determine the source from which educational research money has been obtained, the things for which it has been spent, and the sources from which institutions plan to obtain additional research funds in the future. Its value will be due in large part to the willingness of those in charge of schools and departments of education to contribute their time and knowledge of their institutions. Since the study is based on a nationwide survey, and the survey instrument demands considerable effort for its completion, the sum total of labor involved on the part of all who assist in it is substantial.

I. SCOPE OF THE STUDY

This study is based on a nationwide survey of 727 institutions of higher education, offering at least a bachelors degree, all of which are involved in the training of teachers. The total of such institutions in the United States is approximately 1,330.[1] Therefore, the selection is an unusually large one, and results should approach the results which might be expected had the entire group been surveyed.

The instrument itself covers six major topics, and may be studied in detail in Appendix A. Under each of these topics an attempt was made to determine present conditions and to obtain some projections for the near future.

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[1] U.S. Office of Health, Education, and Welfare, Education Directory: Part 3 - Higher Education. Washington, D.C., U.S. Government Printing Office, 1966, p. 10.

The immediate purposes were to determine if present resources could be expanded beyond their current commitment to educational research, and if untapped resources were available. Another and longer range objective was to provide information to members of Congress concerning the status of educational research so that they might make better-informed judgments about additional support for institutions not heavily involved in educational research at the present time.

II. THE PROBLEM

Educational research is vital for the improvement of every phase of the endeavor to help young people learn. Regardless of the level or type of educational goal, improvement is aboslutely necessary. No educator or national leader has espoused a trial-and-error process to achieve success in education, but far too few have crusaded for a vastly greater commitment to the necessary research.

Despite the increasing financial commitment by every level of government to education, funds dedicated to educational research are still severely limited. The greatest efforts toward the expansion of research in education recently have come from the federal government through the U.S. Office of Education. The potential from this source, immense as it is, may still fall short of the need. The

89th Congress, during the 1966 session, effectively reduced the federal funding of educational research by not increasing the Cooperative Research Program budget despite the growing pupil population.[2]

It is probable that money appropriated for educational research, whatever its source, will not keep pace with worthwhile research projects conceived by educators. To date, no nationwide cry of "enough" has arisen where educational research funds are concerned. It would be wise to have some rationale for allocating such federal funds for educational research as may become available. This study can serve as part of the basis for allocation, for its design may suggest where both commitment and capabilities appear to lie in some of our institutions of higher education.

III. DEFINITION OF TERMS USED

Early in the development of this study, it seemed clear that the one term appearing on the survey instrument most susceptible to misinterpretation was "educational researcher." Since there was no complete agreement on a definition at this university, letters were sent to five well-known educational researchers asking for their help in developing a definition which could be used in this study. Replies were received from Egon Guba, Chester Harris, Julian Stanley and Norman Bowers. Their own comments and material to which they referred contributed greatly to the definition which was ultimately developed. Final responsibility for any weaknesses in the definition, however, must rest with the author.

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[2] Lindley J. Stiles, "Supporters of Education Research," (Newsletter to selected groups of educators and public officials), November 8, 1966.

The following statement from Schedule I of the questionnaire establishes the criteria upon which those who may be considered educational researchers are to be judged.

> For the purposes of this survey, an educational researcher is defined as a person who has conducted research, the results of which have been disseminated through appropriate professional channels, e.g., books, monographs, journals or other types of mass media. The research must be of more than a local concern and contribute to the sum of knowledge in education. Opinions or reviews of the work of others are not considered research. Philosophical and theoretical studies may be considered research if new concepts or models are developed or existing ones expanded and improved. This definition recognizes research which develops or validates measuring instruments, techniques, courses of study, guidelines or evaluative criteria. Surveys should include suggestions for new approaches, directions or goals. Ideally, research permits the testing of hypotheses and the drawing of inferences from valid data. Applying these criteria, how many members of your faculty can be considered qualified as educational researchers?

Some may take issue with these criteria, but a degree of uniformity was provided the deans of schools of education as they considered the questions in the survey instrument.

While the idea of a full-time-equivalent is not new, a brief statement of procedure for its computation was given in Schedule I, question 1.2. Following the question this explanation was given.

> (Your answer should be expressed in terms of the number faculty members. Twelve faculty members spending part of their time in research may be the equivalent of two, three, or four full-time faculty, etc.)

No other terms utilized were of such specialized or esoteric nature as to require definition. Doubts most often arose because a survey question was asked which did not fit the limited nature of the research program in schools which were less research oriented. A few respondents had difficulty in separating expenditures for research from a budget format which was limited in detail. These, however, were not problems of terminology, but of budget procedure.

From the replies received, it appears that very few problems arose in understanding other survey terminology which was not defined in the instrument.

CHAPTER II

REVIEW OF THE LITERATURE

While there are a few earlier studies which concerned themselves with the organizational framework within which educational research was carried on, these are interesting almost solely from an historical viewpoint. Several studies of the history of educational research bureaus are mentioned by Sieber and Lazarsfeld in their landmark examination of educational research.[1] No effort will be made to discuss these studies of research bureaus here, however, since they are peripheral to this study and are adequately discussed by Sieber.

The title of the study by Sieber and Lazarsfeld presumes that there is an organization to the educational research picture today. A careful reading of the study may raise doubt that there is, in fact, any such organization at all. It would appear that educational research is a loose conglomeration of various activities, often carried on by individual researchers working alone against numerous impediments to their progress. Sieber did state that there were probably 133 research bureaus now in existence. However, his questionnaire produced only 84 replies, of which 20 proved to be something other than research bureaus. Thus it would appear that there are at least 64 plus an undetermined number from those institutions which did not reply, leaving a potential maximum of 113 research bureaus. This suggests that there is truly some organization to be found in educational research, especially when one considers there are also at least 38 coordinators of research in schools of education described in the study.[2] Only upon further reading is it clear that the organization in each bureau differs substantially from that in any other, and that the place of each in the hierarchy of the schools of education varies a great deal. As if this were not enough to confound any picture of organization, the 38 coordinators of research in universities as described fulfill that function in a myriad of ways. Their positions varied from facilitator to initiator, and their duties suggested ambiguous relationships with the school of education.

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[1] Sam D. Sieber and Paul F. Lazarsfeld, The Organization of Educational Research, Cooperative Research Project No. 1974 (New York: Columbia University Press, 1966), pp. 96-106.

The fact that no real picture of organization is discernible does not detract in the slightest from the high quality of the Sieber study. It clearly portrays what is and makes suggestions for what ought to be. Though the authors never make the statement outright, it becomes clear that educational research is in a state of organizational chaos, a condition which must be corrected if real progress is to be made.

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[2] *Ibid.*, p. 17.

The Status of Research

If the organizational climate of research is chaotic, what is the status of research as an activity in the eyes of those who are most concerned with it? The answer discovered by Sieber is startling. His survey revealed that it was most often the dean of the graduate faculties who ranked research above teaching or service, and that it was least often the faculty of education who put such importance upon research. When you consider that it is the faculty who must perform the research, who are most vitally concerned with the results of research, and who are best equipped to understand and apply research findings, it is easy to become deeply concerned.[3] This, it seems to me, is a crucial point. Faculty disinterest in research is the prevailing condition. In only 8% of the schools which reported did the education faculty see research as a primary goal. This is a terrific block to research since deans in 85% of the schools reported that the educational faculty was a primary influence on the choice of emphasis upon goals.[4] This disinterest in educational research on the part of faculties of education is further confirmed by a study of the research proposals submitted to the U.S. Office of Education during the period 1956-63. Sieber's study shows that studies submitted by those located in educational positions remained fairly constant, varying from 50 in 1956-57 to 45 two years later, then to 60 in 1960-61, and finally decreasing to 54 in 1962-63. Meanwhile, proposals submitted by researchers not in education increased from 17 in 1956-57 to 62 in 1962-63. The picture becomes clear. Educators are falling behind by standing still.[5]

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[3] Ibid., p. 24.

[4] Ibid., p. 26.

Perhaps there is a reason for the disinterest in research shown by education faculties. One major factor may be the strongly expressed preference of deans for hiring those with teaching experience rather than research experience.[6]

Sieber's study also indicated that a lighter teaching load was related to higher research quality.[7] Coupled with the preference of deans for hiring those with teaching experience, a heavy teaching schedule is another impediment to any strong desire to do research. In the eyes of the deans, the teaching job must first be done. If something is to be sacrificed, then it will be educational research.

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[5] _Ibid._, p. 28 appendix. [6] _Ibid._, p. 62.

[7] _Ibid._, p. 68.

Even though the deans often desire more research, as evidenced by the fact that 31% of the education deans saw research as the primary goal, they give way to the constant pressure for the performance of the teaching function, subordinating research as they feel they must.[8]

Sieber did make one key suggestion which might encourage faculties of schools of education to take a deeper interest in research. He found a relationship between the schools which were rated as doing the best research and also had participation by the academic faculty in the recruitment of school of education personnel. This becomes significant when it is noted that in only 2% of the remaining schools, those not rated in the best research category, had the academic faculty participated in this way.[9] Sieber did not attempt to state that there was a direct causal relationship, but did make the point that these two conditions existed side by side.

Research Quality and Production

Further reading revealed that not only were educators less interested in doing research, but that the quality of the research which they did might not compare favorably with that done by academic faculty members. If the quality of their research is truly lower, at least educators do not lack respect for research results, they simply lack enough appropriate results. Sieber further reports that deans do not feel that dissemination of research results is the problem, so much as production of research.[10]

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[8] *Ibid.*, p. 26.

[9] *Ibid.*, p. 72.

If educational research is considered vital, why has so little real production resulted? Sieber gives two possible reasons. (1) The pressure of the practical, which has held back the tide of science in education, and (2) the preference of the faculty for association with field service units rather than research units.[11]

Supply of Researchers

Educational researchers are scarce. This is surprising in light of the fact that approximately 1,750 doctors degrees are granted in education each year,[12] but it is a fact documented quite clearly by Sieber's study. First, he points out that there is a low level of manpower input in educational research, that preparation of researchers is not a major goal of schools of education, that only 17% of such schools provide a program for research training, and at the same time emphasize research training. He further states that internships are rare, and that only 6.3% of doctoral recipients went into research as a primary activity upon receiving their degrees. Of this 6.3%, almost half of the positions were not in the academic community but were in public schools or in outside research agencies.[13]

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[10] Ibid., pp. 213-14. [11] Ibid., pp. 231-32.

[12] National Education Association, "Where Are the New Doctor's Degree Holders?" NEA Research Bulletin, Vol. 43, No. 2, May 1965.

Sieber's survey revealed that 80% of deans of schools of education felt that weak training programs in research had been a hindrance to the advancement of educational research.[14] Training programs had been far too few, and serious weaknesses had existed in them. The consideration of training programs leads to the study conducted by Guy Buswell and T. R. McConnell.

Training Researchers

Late in his study Buswell makes a crucial statement. In one paragraph he summarizes the situation regarding the shortage of educational researchers.

> The U.S. Office of Education estimates that in 1965 over 54.4 million, or 28 per cent of the population were studying in our educational institutions. By committing itself to the task of providing educational opportunities for all of its citizens, the United States has placed in the responsibility of its educators a task which exceeds in nature and in scope the educational tasks of the other major nations of the world combined. Added to this is the fact that there are probably no local, national, or world problems (e.g., civil rights, equality of economic oppor-

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[13] Sieber, op. cit., pp. 254-60.

[14] Ibid., p. 266.

> tunity, world peace) that are not reducible to a question of education. The need for research scholars who can work toward the alleviation or solution of these problems is reaching the critical point.[15]

In comparing a group of 1954 doctoral recipients with a group of 1964 doctoral recipients, Buswell found no significant difference in the number of statistics courses taken by the latter group, but that more sophisticated courses were the norm by 1964. He also discovered several detriments to the training of the 1964 group in relation to the 1954 group. For instance, a larger percentage of the students was in debt at the time of receiving the doctorate in 1964, a larger percentage of the students was married at the time of receiving the bachelor's degree, and a smaller percentage of doctoral students in 1964 had majored in the social and natural sciences.[16] Buswell commented that it was unfortunate doctoral recipients in education were generally older than those in other academic groups, and found that this condition had not improved over the 10 year period. Another factor which might have contributed to the production of more and better trained researchers was the amount of time spent in residence. The 1964 doctoral recipients showed no significant difference in the length of residence over the 1954 group. Additionally the time elapsed between first enrollment and receiving the doctorate did not change appreciably in the ten year period, nor did the per cent of each group entering an academic position. When these factors are considered, it is clear that the conditions in training institutions which might greatly affect the quantity and quality of educational researchers produced have not shown a great deal of change over the last ten years. In fact, on several measures, the 1964 group suffers by comparison with the 1954 group. In concluding his comparison of these two groups, Buswell states that the only hope for more research is a great augmentation of research funds since the training of researchers has not kept pace with our needs.[17]

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[15] Guy Buswell and T. R. McConnell, Training for Educational Research, Cooperative Research Project No. 51074 (Berkeley: Univ. of California Press, 1966).

[16] *Ibid.*, p. 52.

Variables affecting the production of researchers. It may be worthwhile to look at three separate sets of variables which seem to have a relationship to the production of educational researchers. The first variables are those which concern the student himself. Buswell found that the more productive researchers had received their degrees by age 32 or younger. He also found that educators waited later to decide to do graduate work than did those in other academic disciplines, and that in general educators had a lower ultimate objective at the time that they began graduate work. Most of them intended to work only for a master's degree. Another significant, but negative, factor was the amount of teaching experience possessed by the candidate. It was shown that the more teaching experience possessed, the less productive a candidate was as a researcher. Another negatively related factor was the number of undergraduate courses in education taken by the candidate. The more such courses taken, the lower was the ultimate research productivity of the candidate.[18]

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[17] *Ibid.*, pp. 52-53.

The second group of variables involves several aspects of the graduate programs. Buswell found a significant relationship between actual participation while a graduate student in doing research, either as an assistant to a professor or as an assistant in a research center or bureau, to later research productivity. He also found that those who published research prior to receiving the doctor's degree were more productive later than those who did not. Further, the situation which found fewer educators able to pursue an uninterrupted residence seemed to contribute to a lower research productivity. Buswell also noted that fewer of those in the research group were in debt at the time of receiving their degrees than was the case for those in his no-research group. Finally, he pointed out that the percentage of doctoral recipients from public institutions who have published research is significantly higher than is the percentage of those from private institutions.[19]

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[18] *Ibid*., p. 20.

Post-doctoral variables comprised the third group which Buswell studied. He found that the most favorable climate for doing research was in the major universities that conferred doctoral degrees. He pointed out that subjects who published their first research within the three years following their degree were much more productive than those who delayed their research activities. Sieber noted a tendency among productive researchers to follow up the problems studied in the dissertation. The percent of time each researcher made available for research showed a significant difference between the research and no-research groups. The data collected seemed to indicate that the sabbatical year was a potential source of research energy not greatly used at present. Finally, more than 75% of the doctoral recipients rated work on the dissertation as having great value in training for educational research.[20]

Thirty-one Outstanding Researchers

A major part of Buswell's study was the analysis of the characteristics and production of 31 people classified by his staff and other educational researchers as outstanding researchers. It would be worthwhile to take a brief look at the characteristics which Buswell felt contributed to the success of these researchers. This is particularly true since the balance of the present study concerns itself not at all with such factors, even though they are significant in future selection of potential educational research specialists. Buswell lists nine characteristics which he finds common to these outstanding researchers.[21] The outstanding researchers:

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[19] *Ibid.*, p. 37.

[20] *Ibid.*, p. 36.

1. Were graduates of liberal arts undergraduate programs
2. Attended one or more private institutions of higher learning
3. Earned degrees in two or more fields of study
4. Held doctoral degrees from Columbia, Harvard, Chicago, Minnesota, California or Ohio State Universities
5. Selected their graduate school on the basis of its reputation for scholarly research and its outstanding research faculty
6. Attended graduate school on a continuous full-time basis

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[21] _Ibid_., p. 111.

7. Completed the doctoral degree before age 30
8. Published research before (or within one year of) completion of the Ph.D. requirements and consistently thereafter
9. Were somewhat alike in personality scales measuring theoretical orientation, ability to deal with complex ideas and autonomy but more broadly varied on scales measuring thinking introversion and estheticism

Their graduate programs. The group of outstanding researchers analyzed the doctoral programs in which they had participated, and suggested the following strengths and weaknesses.[22]

Strengths

The university provided an atmosphere which:
1. Placed high values on research
2. Encouraged everyone, from theorist to clinician, to do research
3. Included excellent models of scholarship
4. Provided an interdisciplinary viewpoint
5. Generated a respect for the field and for data
6. Provided freedom from a crowded or rigid curriculum
7. Tolerated different or new approaches and ideas

Weaknesses

The program provided insufficient:
1. Emphasis on the implementation of research techniques
2. Opportunity for experimentation
3. Preparation and training in research design
4. Statistical preparation
5. Coursework outside the department

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[22] *Ibid*., p. 105.

8. Encouraged independence
9. Encouraged a continuous engagement in research
10. Included adequate consultative opportunities
11. Provided strong preparation in the basic tools
12. Provided supervision when needed
13. Provided a first-rate auxiliary staff

Many of the strengths listed by these outstanding researchers are considered in the balance of the present study. Strengths numbered 1, 2, 4, 9 and 13 will be investigated in some depth later in the study. A comparison will be made which will attempt to show whether institutions today are emphasizing these points to encourage the development of young researchers. Only weaknesses numbered 3 and 5 are given much consideration in the balance of the study. It can be briefly stated at this point that results were not encouraging. If those strengths as listed by Buswell truly contribute to the production of outstanding researchers, then educational research is still in real trouble.

Quality of research courses in education. When asked to compare the quality of research courses in education with the research courses in other departments, the outstanding researchers rated courses in education better 12.5% of the time and courses in education equally as good as those in other departments 62.5% of the time. Thus, although training for educational research needs improvement at least such training in departments of education is rated as good or better than training in other departments 75% of the time. It is clear that research training, whatever the department, needs a major overhauling.[23]

Environmental Requisites for Training Researchers

Finally Buswell notes that the prime requisite of the environment for development of researchers is that "the novice (must) be surrounded by, and involved with, those who were actively doing research, preferably on an interdisciplinary basis."[24] Since the present study deals in considerable part with the status of interdisciplinary cooperation in institutions today, this point is most significant. The picture here is not bright as will be shown in the balance of this study.

Although interdisciplinary cooperation seems important both to Buswell and to Sieber, the latter points out that there is only a slight relationship of the production of researchers to the number of courses required in departments other than education.[25] Sieber feels that interdisciplinary cooperation is valuable in the production of researchers, thus agreeing with Buswell. Sieber's study indicates, however, that such cooperation need only occur in the selection of the educational faculty, and in providing research opportunities for doctoral candidates. The mere prescription of coursework outside the department of education does not seem to be the type of interdisciplinary effort which significantly affects the production of researchers. Successful interdisciplinary efforts are those which provide a variety of professorial models for emulation by graduate students, a wide array of outlooks on research, a broad selection of research methodologies, and numerous opportunities for selection of research topics suited to the abilities of the graduate students themselves.

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[23] Ibid., p. 103. [24] Ibid., p. 99.

[25] Sieber, op. cit., p. 303.

Current Needs for and Training of Research Personnel

In September of 1966, Clark and Hopkins offered some preliminary estimates of research, development and diffusion personnel required in education. An almost unbelievable need for research personnel was outlined in their opening paragraph.

> If the Elementary and Secondary Education Act of 1965 proceeds with its R and D programs following a normal growth pattern (i.e., growth presently predicted by Federal policy makers), the operation of this program and associated R and D programs in USOE will consume the time of approximately 130,000 professionals by FY' 72. By comparison, R and D personnel functioning in this capacity in FY' 66 amounted

to less than 5,000 professionals.[26]

While one might argue with this projection, in the belief that such a great need could not exist, study of this memorandum leaves no doubt that the need is great and the supply is limited.

From their study of documents of the U.S. Office of Education, Clark and Hopkins concluded that "only about 15 schools or colleges of education in the country could be said to have had a planned program for the training of researchers, and only 35-40 produced even one or two researchers over a 10 year period."[27]

What then is the present supply of "hard core" researchers as defined by Clark and Hopkins? They estimate that this hard core group now numbers approximately 2,000 and is increasing by about only 100 per year. This 100 per year increase corresponds closely with figures presented in the Sieber study. It does not require a great effort to see that the present supply plus the present production makes but a minute dent in the ultimate need for research personnel in education.[28]

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[26] D. L. Clark and J. E. Hopkins, "Preliminary Estimates of Research, Development and Diffusion Personnel Required in Education, 1971-72," (Special Project Memorandum to L. G. Burchinal, at Indiana University, Sept. 1, 1966), p. 1.

[27] *Ibid.*, p. 13.

[28] *Ibid.*, p. 14.

In discussing the initial impact of the Elementary and Secondary Education Act, Clark and Hopkins noted that staffing of new projects called for hard core personnel numbering between 5500-6000. Since these people were in addition to researchers already working, Clark concluded that they were drawn from the "occasional-researcher" and "hanger-on" categories into the "hard core" category, and that extensive recruitment was undertaken outside the educationist community.[29]

After projecting a need for 130,000 educational researchers, Clark and Hopkins conclude that the present crisis will become a major one unless attention is directed immediately to the problem.

> If the Title IV Research Training Branch of O.E. were to receive triple their present funds by FY' 68, and if they were to use these monies strictly on the preparation of personnel in the "Research" category, the shortage of personnel in this category by FY' 72 would be roughly 4,000 F.T.E. and no dent at all would have been made in the shortage of 29,700 F.T.E. in "Development" and 25,500 F.T.E. in "Diffusion."[30]

It was hoped that the Title IV Training Program would meet a substantial part of the demand for new personnel in Research and Development. Such does not seem to be the case, for Clark and Hopkins state that already the program output is far below the demand.[31]

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[29] Ibid., p. 15.

[30] Ibid., p. 16.

[31] Ibid., p. 17.

The appendix to the Clark study mentioned an analysis by McComas and Willey of the educational researcher needs projected by chief state school officers. McComas established a need for 1,620 educational researchers over the next three years from projections by the chief state school officers. Since we have already seen that the production of "hard core" researchers appears to be about 100 a year, this will result in a shortage of about 1,300 educational researchers in the next three years.[32] It must be remembered that this shortage is in addition to that created by programs under sponsorship of the U.S. Office of Education.

A New Plan for Training Educational Researchers

Julian Stanley has proposed an experimental program designed to train researchers specifically for school systems.[33] In brief, Stanley would draw teachers from school systems into a fifteen month training program financed partly by the U.S. Office of Education or other organizations, and partly by school systems. The program would be sub-doctoral in aim, and the trainee would be committed to serve his school system for two years following the training period. During the training period, an income equal to five-thirds of his salary for the academic year was suggested.

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[32] Clark, *op. cit.*, Appendix, p. 5.

[33] Julian C. Stanley, "Preparing Educational-Research Specialists for School Systems," *Phi Delta Kappan*, XLVIII (November, 1966), pp. 110-114.

Qualifications for these potential researchers include youth (preferably less than 30), from two to five years teaching experience, verbal and quantitative skills, some theoretical bent, and a minimum of dependents.

A slightly different graduate program, with the same ultimate objective, could be offered for liberal arts graduates who have had no teaching experience, and few, if any, courses in education.

Fundamental to these plans, says Stanley, are good students, a short program, and at least 30 to 100 trainees in each institution offering such a program. A long-term, systematic plan for insuring interactive support from better prepared researchers at training institutions would be necessary to keep the new researchers from becoming overwhelmed. Through such liaison, school research could be balanced between necessary rigor and applicability. Stanley outlines procedural steps for accomplishing this task, and these ought to terminate the situation in which ". . . university professors and graduate students have had to intrude their research efforts forcibly into unwilling school system atmospheres, with small results."[34]

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[34] Stanley, op. cit., p. 114.

If Stanley's program has a weakness, it is probably that it is not specific enough. In the next article of this issue of the Phi Delta Kappan, Gephart comments as follows:

> If we are going to beat the bushes for good players we need more direction than, "able, young research-oriented." What is "research-oriented?" How are "interests and other aptitudes for educational research" displayed by a potential rookie? Yes, if Stanley's recruiters are going to give him a winner, they are going to have to have these qualifications "spelled out more specifically."
>
> What are they going to do in that 15-month training camp? He says he would work them "full-time and intensively" and I'm sure he will. But at what? What are these "appropriate experiences"? What is the nature of this proposed internship?[35]

Such comments are well taken, but it seems that Gephart has missed the point. Stanley has briefly sketched the grand design in a limited article. It seems presumptuous to assume that detailed plans would not be laid, once the idea gains acceptance.

If the Stanley plan were successful, it would guarantee school systems at least two years of intense research interest and concern from each trainee and support from the training institution. Further, though the goal is for a master's degree, many trainees might be inspired to serve their two years obligation, then return to complete a doctorate in educational research. Though this is not a primary aim of the Stanley plan, it could be a great benefit to research in the long run.

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[35] William J. Gephart, "New Game; New Strategy; A Response to Stanley," Phi Delta Kappan, XLVIII (November, 1966), p. 115.

An additional benefit also accrues. School systems, having made a commitment to research by supporting a trainee and utilizing him for two years, might develop a whole new outlook of cooperation with and respect for university research efforts. Tremendous strides might be made because of the new harmony of interests. Old fears and animosities could be minimized to the great benefit of pupils in the schools, and the potential researchers in the universities. Since major school systems and community colleges will need 988 research specialists over the 1966-69 period, according to the Clark memorandum, a plan to provide such people deserves some consideration.[36]

SUMMARY

Educational research presents a picture of almost chaotic disorganization. Research bureaus and coordinators have been introduced to help bring order, but have only made a small beginning toward this herculean goal. Educational research resembles the proverbial weather--everyone talks about it, but no one seems to be doing much to bring it under control.

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[36] Clark, loc. cit., Appendix, p. 5.

Research occupies a low status position among educators. While deans desire more, they are hiring teachers rather than researchers. The pressure to educate students now is greater than the perception of the need for research which will improve the education of tomorrow.

Educators respect research results, but today's problems seem to be a production shortage, and the difficulty of combining rigor with generalizability.

Capping the manifold problems blocking educational research is inadequacy both in the training and supply of researchers. While needs are growing, training programs relatively are not. The institutional environment has shown no real improvement from 1954 through 1964, revealing that educational researchers are still older than other doctoral recipients, in relatively poorer financial condition, lacking time for residence, supporting more dependents and receiving only slightly better instruction than in 1954.

The great infusion of money which might reduce some of the problems appears to be leveling off. The federal government, faced with Viet Nam, seems to be holding the line on domestic expenditures, and Congress is loathe to exceed previous spending levels for educations.

Several conditions seem to be necessary to production of the great number of educational researchers now in demand. More money must be made available to create more training programs. More training, however, is not a guarantee that needs will be properly met. These programs must be of high quality involving dedicated professors who can serve as models to students, wide opportunities for actual participation in research during training, encouragement for students to write and publish research early in their careers, more adequate financial aid to permit uninterrupted study in residence, a block of time dedicated to research without numerous competing demands, and interdisciplinary cooperation of a high order.

The supply of researchers, already far short of the demand, will continue to fall behind unless training programs are vastly expanded and upgraded. Projects will either be neglected or produced under pressure by people poorly qualified to do them. The need for research in education is felt by many, but top priority has not yet been assigned this vital task.

CHAPTER III

THE CONSTRUCTION AND USE OF THE SURVEY QUESTIONNAIRE

I. THE FORMAT OF THE INSTRUMENT

Three key considerations guided the construction of the survey instrument included in Appendix A. The first consideration was whether present resources in colleges and universities could be expanded beyond their current commitment to educational research, and secondly, if untapped resources existed. The third consideration involved reporting to Congress such information as would help its members make better informed judgments about additional support for institutions not now heavily involved in research.

The first page of the questionnaire was designed to provide a basis for analysis and comparison of the institutions. Each institution was asked to give four items of information which would aid in later analyses. First, they were asked to classify themselves as a university, a liberal arts college, a teachers college, or in a few cases, as some other type of institution. Second, they were asked to give their geographic location. Third, they were asked to indicate their enrollment within six ranges. Fourth, they were asked to indicate their accreditation or recognition status. These four items of information permitted a later comparison of such features as the activities of universities as opposed to teachers colleges, or research activities of large versus medium sized or small institutions. It was not certain that geographic information would prove significant, but such data would allow greater flexibility if any trend seemed to be developing.

The questionnaire provided for six schedules, each concerned with one pertinent phase of the institution, its attitudes, and its personnel resources. Based on this format, each schedule will be discussed in the following pages.

Schedule I: Human Resources for Educational Research

Several factors are significant in considering human resources for educational research. The prime resource is the faculty. However, they do not stand alone, for faculty members require adequate and competent clerical and secretarial help. A limited analysis of support personnel was provided for in the questionnaire. A tradition has developed in the larger universities and, to a lesser extent in medium sized and smaller institutions, which allows students to assist professors in their research. Because this tradition is so widespread, a question concerning graduate and undergraduate involvement in research was included.

Numbers alone cannot disclose the degree of educational research involvement of a faculty. Other indicators are necessary to give a clear picture. For example, the time allowed for research is vital. Another indicator which can be useful is faculty membership in professional research associations and whether faculty members hold committee memberships or officerships in such organizations.

The commitment of an institution can be measured to some extent by its willingness to train young researchers. Consequently, each institution was asked if it had such a program or was planning one in the near future. Further, institutions were asked if they planned to hire faculty members whose principal function would be educational research, another indication of the extent of commitment.

Since educational research can now be done in cooperative organizations, two questions were asked which would provide information concerning the affiliation of faculty members with regional research laboratories and research and development centers sponsored by the United States Office of Education. Chapter II discussed some earlier studies and findings concerning the pool of research manpower necessary to operate such cooperative programs and questions were designed to appraise the present actual involvement of faculty members with these programs.

The final question in Schedule I set the criteria upon which deans of education were asked to judge how many of their faculty members could be considered qualified as educational researchers. The answers to this question should provide some idea of the present pool of faculty members who might be considered educational researchers. Since earlier mentioned studies had indicated that many of those who had earned doctorates did not actually do research, the doctorate was not made a criterion. Possession of a degree does not necessarily qualify one as a researcher.

Schedule II: Physical Facilities for Educational Research

Even the most talented and dedicated researcher needs the proper environment in which to work. Certain types of research are possible today which could not have reasonably been done twenty-five years ago. Computer technology has made practical some types of research which would have required an inordinate amount of manpower in the past. Educational research must often be done in the classroom, a situation which is nearly impossible to duplicate in a laboratory. Schedule II briefly investigated the availability of high speed computers, research opportunities in campus elementary and secondary schools, or arrangements with outside school systems, and the approximate percentage of building space allocated to research at the institution. Realizing that some institutions have building programs underway, the question of space allocated for research in the new building was investigated.

Though admittedly brief, this schedule provided some data on one phase of institutional commitment to research. The absence of a computer, adequate space, or an elementary or secondary classroom situation would severely curtail the type of research done at any institution. A brief glance into the future provided by the question which inquired into building plans also gave some indication of the depth of interest in research.

Schedule III: Financial Resources for Educational Research

Research has been carried on in the complete absence of institutional funds by dedicated researchers who were willing to use their personal funds for such work. It is obvious that such limitations are serious. Schedule III was substantially modified following the pilot run of the study. The pilot run, discussed later in this Chapter, indicated that many schools were unable to distinguish expenditures for research from other expenditures in dollar amounts. It did appear, however, that deans might be able to estimate the percentage of allocations for research within their budgets. Consequently, the final schedule provided primarily for percentage answers. The first and most significant question dealt with the percentage of the total educational budget devoted to research. In this one brief entry, an institution reveals a great deal about its commitment to research. The budget allocation and the number of qualified educational researchers in an institution comprise the cutting edge of this study. Without faculty members willing and qualified to do research, and without sufficient funds, a school's progress in educational research would be negligible.

Research money has been available over the past, and it is important to know the sources from which this money has been obtained. A question to determine these sources was included. Equally important is the question dealing with the functions and percentages for which funds were expended within the research budget. It is unfortunate that this question was often answered incompletely or in a fashion which made the true answer difficult to determine.

Two questions were asked in Schedule III concerning the amount of money allowed for faculty travel to research conferences and for travel to public or private agencies to discuss research proposals and negotiations. Since data may only be obtained in some cases by making a trip to the source, either for consultation or for conducting the research itself, travel often becomes necessary. An institution with no provision for such travel would severely curtail research activities.

Finally, it seemed important to make assessments concerning future plans for expanding financial resources for research. Consequently, each institution was asked if it planned to expand its financial base for research during the next year and the possible sources from which it might obtain increased research funds.

Schedule IV: Interdisciplinary Resources for Educational Research

Earlier studies have indicated that interdisciplinary cooperation improved the environment for conducting educational research. Therefore, a decision was made to investigate the extent of interdisciplinary cooperation at each institution. Several key conditions are involved in most interdisciplinary efforts. The first condition is the joint appointment in which a faculty member holds professorial rank in more than one department or discipline. The extent of joint appointments at each institution was questioned in the schedule. Real meaning is given to a joint appointment when financial support is given the faculty member by both departments. This is an excellent way of measuring the depth of the commitment to interdisciplinary cooperation.

Interdisciplinary cooperation also involves research conducted jointly by the department of education and other departments in the institution. Conversely, educational research carried on by other departments without the cooperation of the department of education might indicate a potential weakness in research programs. Questions designed to determine both the type and quantity of interdisciplinary research were included in this schedule.

Schedule V: Policies, Attitudes and Aspiration of the Institutions toward Educational Research

Institutional policies can nurture or stifle research programs. Research can be done because of such policies or in spite of them. Research requires time and an institution which releases faculty members for research provides this valuable time. On the other hand, an institution can so schedule faculty time as to almost insure that educational research will not be done. In this schedule, institutions were asked whether they released faculty members from teaching or other duties for the purpose of conducting research.

Inspiration for significant research programs may come from participation in national research organizations. A faculty member holding an office in such an association would need time to fulfill his duties. Each institution was asked if it encouraged faculty members to hold such offices and provided time for the duties.

If an institution considers educational research to be significant and worthwhole, opportunities for seminars, colloquia or lectures on some aspect of research are often provided. Each institution was asked whether it provided such opportunities and how often this was done in the past year.

Research does not always involve consideration of topics outside the university or college itself. For this reason two questions were asked concerning research done on topics indigenous to the institution, and the committee structure within which such research was being done. An institution which rarely studied itself, and which provided no structure for internal study missed a most significant area for educational research. Self-study can be the springboard to other significant research outside the institution.

Institutions may be confronted by a number of problems in conducting research. Some typical problems were enumerated and each institution was asked to check those which applied in its own case. Following this check list, the dean of each institution was asked whether it gave sufficient weight to the research function. Those deans who answered "No" were asked to give the major reason that research was not receiving enough attention in the belief that their reactions would provide useful insight toward removing blocks to progress in research.

Schedule VI: General and Supplemental Information

It is possible that an institution might have substantial funds set aside for research, a significant number of its faculty members involved in research, and still be involved in a rather limited number of projects. Though these projects might be large in size, they would be limited in scope. Therefore, each institution was asked to give the number of research projects currently under way in the department or school of education, not including those projects mentioned in Schedule IV which were interdisciplinary in nature. Some opportunity for an assessment of these studies was provided by asking which of the projects would be completed in one year and which would require one or more additional years to complete.

In closing this study, two value questions were asked of each dean. In Schedule III, they had been asked whether they planned to expand the financial base for educational research, and from whence such funds would come. In this schedule, each dean was asked from which source he felt most additional funds for research ought to come. This question was designed to get some indication of the deans' attitude toward involvement by various governmental and non-governmental agencies in educational research, and if any of the common sources for research funds ought to provide more in the future. The second value question asked the deans to indicate a priority of research topics which might provide some guidelines for future emphasis by agencies funding educational research.

The final question concerned the degree of institutional involvement in developmental research, which was defined as "the application of research findings in the schools." Research which lies in the files upon completion has little benefit. It may have provided some satisfaction to the researcher but this is not the purpose of educational research. It gains value only as it is put to work to serve the pupils in our schools. If institutions do research and then allow their findings to gather dust in the files, research money, faculty time, and institutional space and facilities have been wasted. Developmental work is vital to success in the national educational research picture.

II. SELECTION OF SURVEY INSTITUTIONS

From its inception this survey has been designed for breadth of coverage. The Buswell and Sieber studies discussed in Chapter II were both intensive rather than extensive. This study surveyed a large number of institutions in somewhat less depth but over a fairly broad range of questions. Hopefully, this approach would unearth hitherto undiscovered research personnel and facilities and provide data which would inspire other researchers to investigate further. Suspicion existed even at the beginning that the research potential of all but the largest one hundred or so institutions might be very limited, and it was partly the intention of this study to confirm or deny this suspicion.

The selection of the subject schools to which the survey would be sent to was a simple task. The member schools of the American Association of Colleges for Teacher Education (AACTE) for 1965-66 served as the population. These 727 colleges and universities provided a desirable selection because each possessed at least two major qualifications. By voluntary membership in AACTE, each school was committed to teacher education, and having this commitment, might be expected to have an active interest in successful educational research. Second, a requirement for AACTE membership is accreditation by the regional association (i.e., North Central, Southern, Western, New England etc.). While good programs probably exist unaccredited, it is probable that the bulk of accredited programs also include the great majority of proven teacher training programs. The list had the further advantage of including every university cited by both Buswell and Sieber as being among the leading research institutions in the nation.

A pilot test of ten schools was made during the last two weeks of November, 1966. As a result, Schedule III was modified so that all replies concerning budget for research could be given in percentage figures. Schools in the test indicated a general inability to give answers in dollars and cents. No other modifications were found necessary.

The questionnaires were mailed late in December, 1966, and two full months were allowed for their return. This extended period of time was considered necessary because of the detail involved in the questionnaire, the great number of institutions involved and the nationwide distribution. Even so, a larger number of returns might have been hoped for, as will be reported in a later section of this study. Because there was a possibility that questionnaires might have been lost in the holiday mails, a follow-up letter was sent one month after the first mailing. Replies to the follow-up revealed that some questionnaires were apparently lost in the mails, since a number of institutions requested a second copy. This reminder also proved valuable in that it produced more than 100 additional replies.

III. SUMMARY

The questionnaire was designed to query many institutions on a broad array of topics. Replies were coded for computer processing. Three hundred and three replies were received from the 727 institutions surveyed, a return of 41%. The mass of information received lent itself to computer analysis because the questionnaire was designed precisely with this procedure in mind.

By its breadth, the instrument allowed confirmation of the key ideas from earlier studies and a sampling of institutions previously ignored. Some reassessment of institutional commitment and capability now becomes possible, and most important, it becomes possible on a nationwide basis over the entire range of large and small colleges and universities.

Chapter IV will examine the results obtained and Chapter V will discuss their implications offering such conclusions as seem warranted.

CHAPTER IV

RESULTS OF THE SURVEY

I. INSTITUTIONAL DATA

Table I presents an overview of the respondent institutions and examines the location of each institution by category. As stated in Chapter I, there are approximately 1,330 institutions in the United States which offer at least a bachelor's degree and are involved in the training of teachers. Of these, many are not accredited by a regional association. The 727 AACTE members used fulfilled accreditation qualifications, and included more than half the institutions involved in teacher training in our nation.

Table II categorizes respondent institutions by type and size. About 15% of the respondents had less than 1,000 students enrolled. Most of these smaller schools were liberal arts colleges. Medium-size schools of 1,000 to 4,999 students comprised 51% of the respondents, and of these almost two-thirds were liberal arts colleges. Large schools made up about 34% of the respondents, and nearly four-fifths of these were universities. The entire group of respondents were comprised of 35% universities, 46% liberal arts colleges, 9% teachers colleges, and 10%

TABLE I

RESPONDENT INSTITUTIONS BY LOCATION AND TYPE

Location	Universities	Liberal Arts Colleges	Teachers Colleges	Others	Total
1. Northeast	7	6	4	2	19
2. Mid-Atlantic	13	14	8	9	44
3. Mid-West	33	47	3	2	85
4. Plains	5	21	5	3	34
5. South and Southeast	15	22	3	9	49
6. Southwest	15	10	1	1	27
7. Rocky Mountain	6	9	1	1	17
8. Far West	10	10	3	4	27
9. Puerto Rico	1	0	0	0	1
Totals	105	139	28	31	303

TABLE II

RESPONDENT INSTITUTIONS BY SIZE AND TYPE

Size	Universities	Liberal Arts Colleges	Teachers Colleges	Others	Total
Under 500	0	6	2	0	8
500-999	0	32	4	0	36
1,000-1,999	5	67	7	4	83
2,000-4,999	17	28	13	14	72
5,000-9,999	40	4	2	12	58
10,000 and more	43	2	0	1	46
Totals	105	139	28	31	303

"other" institutions. The last group included the former teachers colleges which have recently been broadened into institutions resembling universities, but which retain the powerful emphasis upon teacher preparation.

This survey could be criticized for bias on several grounds. First, it did not attempt to reach all teacher training institutions. Second, replies were received from less than half those institutions queried. The possibility exists that schools replied only if they were doing some significant research. This question will be discussed later, and shown to be of little consequence. The third ground for alleged bias might be that respondents were not proportionally representative by type and geographic location. Table III demonstrates, however, that the respondent institutions are, in fact, proportionally representative.

Table IV sets forth the distribution of universities, liberal arts colleges, teachers colleges and "others" on a nation-wide basis, comparing these percentages to the percentages of replies received from each type of institution. It is plain that a disproportionately high return was made by universities, and a correspondingly low one by liberal arts colleges.

Another question concerning the respondents is whether they varied in size from the norm for their type.

TABLE III

DISTRIBUTION OF QUESTIONNAIRES AND REPLIES BY LOCATION

Location	Percent of all Questionnaires Sent	Percent of all Replies Received	Replies Over or Under Represented
Area 1	7.4%	6.2%	- 1.2
Area 2	18.00	14.5	- 3.5
Area 3	21.8	28.00	+ 6.2
Area 4	13.5	11.2	- 2.3
Area 5	18.3	16.1	- 2.2
Area 6	8.4	8.9	+ 0.5
Area 7	3.8	5.6	+ 1.8
Area 8	8.1	8.9	+ 0.8
Area 9	0.5	0.3	- 0.2
Totals	99.8*	99.7*	

*Not equal to 100% due to rounding-off.

TABLE IV

COMPARISON OF TYPES OF RESPONDENT INSTITUTIONS TO NATIONWIDE PERCENTAGES

Type*	Percent Nationwide**	Percent of Replies
Universities	13%	35%
Liberal Arts Colleges	71	46
Teachers Colleges and Others	16	19
Totals	100%	100%

*Note: Excludes certain technical, theological, semi-professional and other professional schools.

**U.S. Office of Health, Education and Welfare, Digest of Educational Statistics: 1966, Washington, D.C., U.S. Government Printing Office, 1966, p. 78.

Table V breaks down the nationwide distribution by size and type of institution, comparing it with the distribution of respondents by size and type. The larger institutions tended to reply, though this tendency is pronounced only in the case of liberal arts colleges. Conversely, universities of the greatest size were slightly under represented. None of the deviations should affect the results adversely.

II. HUMAN RESOURCES FOR EDUCATIONAL RESEARCH

The faculty is the most important single factor in the research effort of any institution. From the faculty comes the research talent. Not all faculty members, however, are considered qualified educational researchers within the criteria set forth by this study. An immediate comparison will be made between the total faculty and the number of qualified educational researchers claimed by respondents.

Faculty Size

Table VI presents a breakdown of the faculty membership by type of institution. Analysis reveals 13,686 faculty members holding positions in the 264 responding institutions. The large average size of the faculty in the "others" category may surprise some readers, but keep in

TABLE V

COMPARISON OF RESPONDENTS BY SIZE WITH NATIONWIDE NORMS*

Type:	Universities		Liberal Arts Colleges		Teachers Colleges and Others	
Size	Nation	Respondents	Nation	Respondents	Nation	Respondents
0- 499	0%	0%	16%	4%	11%	3%
500- 999	0	0	36	23	13	7
1,000-5,000	16	21	42	68	62	65
5,000-9,999	33	38	4	3	13	23
10,000 & more	51	41	2	2	1	2
Total	100%	100%	100%	100%	100%	100%

*U.S. Department of Health, Education and Welfare, Digest of Educational Statistics: 1965. Washington, D.C., U.S. Government Printing Office, 1965, p. 92.

TABLE VI

TOTAL NUMBER OF FACULTY ON SCHOOL OF EDUCATION BUDGET BY TYPE OF INSTITUTION

Type of Institution Number of Faculty	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
1-5	53	6	47	0	0
6-10	47	9	36	0	2
11-20	28	11	12	4	1
21-30	17	9	3	4	1
31-40	22	11	4	4	3
41-50	16	10	2	1	3
51-75	24	12	4	3	5
76-100	13	7	3	1	2
101-150	22	10	3	4	5
151-200	7	3	0	2	2
201-300	11	6	0	2	3
301-424	4	3	0	0	1
Total Responses	264	97	114	25	28
Total Faculty	13,686	6,998	1,810	2,019	2,859
Mean of Faculty	51.84	72.14	15.88	80.76	102.11
Median of Faculty	22.00	43.00	6.00	46.00	62.00

mind that this category includes emergent colleges which have grown from small teacher training institutions into institutions approaching university status. It also appears that their deans considered most of the faculty members in "other" institutions to be members of the school or department of education. The average university education faculty includes 72 members, liberal arts colleges 15 members, teachers colleges 80 members, and "other" institutions 102 members.

Qualified Researchers

The question concerning the number of qualified researchers on each faculty does not immediately follow in the questionnaire, but will be dealt with now to permit an immediate over-all picture of the pool of research talent available. Table VII illustrates the replies from deans who were asked how many of their faculty members qualified as educational researchers. By their estimate, the total pool of qualified educational researchers in the 284 institutions which replied numbers 3,070 out of a total faculty of 13,686. Thus, about 22% of all faculty members qualify as educational researchers. Universities possess roughly two-thirds of all qualified researchers reported, averaging about 20 per institution. Thus, universities find about 28% of their faculty members are qualified educational researchers. Using the same method of comparison, liberal

TABLE VII

FACULTY CONSIDERED QUALIFIED AS EDUCATIONAL RESEARCHERS BY TYPE OF INSTITUTION

Type of Institution Qualified Researchers	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	60	6	45	5	4
1	32	5	19	6	2
2	33	5	23	1	4
3	17	6	9	1	1
4	26	8	13	2	3
5	13	8	3	0	2
6-10	38	15	8	5	10
11-20	29	20	5	4	0
21-30	10	6	1	1	2
31-40	12	8	1	1	2
41-50	6	5	0	1	0
51-100	5	4	0	0	1
101-200	2				
201-365	1				
Total Responses	284	98	127	28	31
Total Qualified Researchers	3,070.00	2,040.00	361.00	365.00	304.00
Mean Qualified Researchers	10.81	20.82	2.84	13.03	9.82
Median Qualified Researchers	3.00	8.00	1.00	4.00	5.00

arts colleges have about 19% qualified educational researchers, teachers colleges about 16%, and "others" about 16%.

Full-time educational researchers. The number of full-time faculty researchers allowed by the budget is equally as important as the number of qualified researchers reported. Table VIII sets forth the replies from the deans who were asked how many faculty members were thus budgeted. Significantly, 158 institutions did not provide for full-time researchers. One-hundred eleven institutions did not reply to the question, and only 34 institutions apparently do provide for full-time researchers in the budget. Of the 147 full-time researchers revealed by this survey, 115 are to be found in universities, slightly more than 78% of the total. Only 32 positions of this nature exist in all other responding institutions.

Part-time educational researchers. Since many institutions might not be able to afford full-time educational researchers, the deans were asked how many part-time educational researchers were budgeted. The replies to this question again heavily favor universities where 456 out of 572 part-time researchers were found. Universities averaged more than seven part-time researchers, while no other schools had as many as two. A compilation of all the replies to this question appears in Table IX which follows.

TABLE VIII

BUDGETED FULL-TIME EDUCATIONAL RESEARCHERS

Type of Institution Number of Full-time Researchers	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	158	37	87	16	18
1-3	24	14	3	2	5
4-10	8	5	1	0	2
11-40	2	2	0	0	0
Total Responses	192	58	91	18	25
Total Researchers	147	115	10	2	20
Mean Researchers	.77	1.98	.11	.11	.80
Median Researchers	0.00	0.00	0.00	0.00	0.00

TABLE IX

BUDGETED PART-TIME EDUCATIONAL RESEARCHERS

Type of Institution Number of Part-time Researchers	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	122	23	78	7	14
1-3	45	13	16	8	8
4-10	16	11	1	1	3
11-40	12	10	1	0	1
41-71	3	3	0	0	0
Total Responses	198	60	96	16	26
Total Researchers	572	456	44	21	51
Mean Researchers	2.89	7.60	.46	1.31	1.96
Median Researchers	0.00	2.00	0.00	1.00	0.00

It was recognized that faculty members often spent normal working hours doing research which was not formally provided for within the budget. The deans were asked to make a careful estimate of the full-time equivalent spent in research by their faculty members during normal working hours. Table X presents the replies to this question. Again, universities show both higher totals and averages than all other categories of institutions. A total full-time equivalent of 553 was reported, of which 386 were reported by universities. With an average full-time equivalent of almost five faculty members, universities exactly doubled that reported by teachers colleges which were next.

While not possessing the largest faculties in average size, universities more than doubled the number of faculty educational researchers available in any other institutional category. It is apparent that universities place a heavier emphasis upon research activities than do other respondent institutions.

Administrative, Secretarial and Clerical Employees

Support personnel are provided by almost all institutions to handle the routine typing, filing, and administrative work which would otherwise cut so deeply into the teaching time of faculty members. To get some idea of the

TABLE X

ESTIMATED FULL-TIME EQUIVALENT RESEARCH TIME SPENT BY FACULTY

Type of Institution Full-time Equivalent	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	87	14	57	6	10
1-3	111	35	48	13	15
4-10	28	21	3	3	1
11-40	8	7	0	1	0
41-50	1	1	0	0	0
Total Responses	235	78	108	23	26
Total Full-time Researchers	553	386	80	57	30
Mean Full-time Researchers	2.35	4.95	.74	2.48	1.15
Median Full-time Researchers	1.00	2.00	0.00	1.00	1.00

distribution of this type of help, deans were asked the total number of supporting employees on the budget. Table XI provides an analysis of the 274 responses. A total of 4,857 employees was reported, of which almost half were found in universities. The means for each institutional category vary widely; "others" reported a high of 37 employees, followed by teachers colleges reporting almost 26, universities reporting more than 23 and liberal arts colleges reporting slightly more than 6. These results indicate that only teachers colleges provide less employee support to the faculty than universities. By comparing Table VI with Table XI, an analysis of the number of professors served by one employee can be made. This analysis shows that approximately three university professors, 2.37 liberal arts college professors, 3.11 teachers college professors, and 2.57 faculty members of "other" institutions are served by one employee.

Full-time research employees. A concern of this study was the number of full-time research employees provided in the budget of the subject institutions. A total of 352 full-time research employees was reported among the 2,337 administrative, secretarial, and clerical employees mentioned earlier. These data indicate that there are approximately two and one-half full-time research employees for every full-time faculty educational researcher

TABLE XI

ADMINISTRATIVE, SECRETARIAL AND CLERICAL EMPLOYEES BY TYPE OF INSTITUTION

Type of Institution Number of Employees	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	16	1	14	1	0
1-3	102	23	70	4	5
4-10	64	26	22	8	8
11-20	31	18	3	4	6
21-30	19	8	4	3	4
31-40	9	4	3	1	1
41-50	10	5	2	2	1
51-75	11	8	1	0	2
76-100	3	2	1	0	0
101-200	8	4	0	2	2
201-240	1	0	0	0	1
Total Responses	274	99	120	25	30
Total Employees	4,857	2,337	762	648	1,110
Mean Employees	17.73	23.61	6.35	25.92	37.00
Median Employees	5.00	10.00	2.00	8.00	12.00

reported. A total of 324 of these employees was reported by universities, more than 11 times the total of all other institutions combined. These figures, which appear in Table XII, further emphasize the relative importance which universities place on educational research.

Part-time research employees. Just as faculty members may spend only part of their time in research activities, so also may employees. The following paragraphs describe three categories of employees who spend at least part of their time in research activities.

Table XIII illustrates the current situation regarding full-time employees who are budgeted partly for research. A study of the table indicates that the total is 206, of which 153 are reported by universities. In simplest terms, almost three-fourths of these employees are found in universities. When this figure is combined with figures from Table XII, it can be seen that 477 out of 558 full-time employees budgeted at least in part for research are employed by universities.

Tables XIV and XV portray the situation regarding part-time employees. Of these, some are budgeted wholly for research and some only partly for research. A total of 256 part-time research employees were reported by respondents. Of these, 212 were found in universities, while only 44 in both groups were reported by all other institutions.

TABLE XII

BUDGET FULL-TIME RESEARCH EMPLOYEES

Type of Institution Number of Employees	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	193	50	102	19	22
1-3	25	18	1	1	5
4-10	10	7	1	0	2
11-40	6	6	0	0	0
41-100	1	1	0	0	0
Total Responses	235	82	104	20	29
Total Employees	352	324	5	3	20
Mean Employees	1.50	3.95	.05	.15	.69
Median Employees	0.00	0.00	0.00	0.00	0.00

TABLE XIII

FULL-TIME EMPLOYEES BUDGETED PARTLY FOR RESEARCH

Type of Institution Number of Employees	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	174	48	93	15	18
1-3	37	14	9	5	9
4-10	10	8	1	0	1
11-30	5	4	1	0	0
Total Responses	226	74	104	20	28
Total Employees	206	153	27	8	18
Mean of Employees	0.91	2.06	.26	.40	.64
Median of Employees	0.00	0.00	0.00	0.00	0.00

TABLE XIV

PART-TIME EMPLOYEES BUDGETED WHOLLY FOR RESEARCH

Type of Institution Number of Employees	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	204	60	99	19	26
1-3	11	5	3	1	2
4-10	6	4	1	0	1
11-50	4	4	0	0	0
Total Responses	225	73	103	20	29
Total Employees	159	141	8	1	9
Mean of Employees	0.71	1.93	.08	.05	.31
Median of Employees	0.00	0.00	0.00	0.00	0.00

TABLE XV

PART-TIME EMPLOYEES BUDGETED PARTLY FOR RESEARCH

Type of Institution Number of Employees	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	194	55	95	19	25
1-3	22	10	7	2	3
4-10	1	1	0	0	0
11-50	2	1	1	0	0
Total Responses	219	67	103	21	28
Total Employees	97	71	20	3	3
Mean Employees	0.44	1.06	.19	.16	.11
Median Employees	0.00	0.00	0.00	0.00	0.00

These figures offer further confirmation of the research involvement of the universities as opposed to other types of institutions.

As mentioned in an earlier chapter, many institutional budgets are not developed in a way that permits functional analysis or position description of each employee. Each dean was asked, when he could not determine the facts from the budget, to estimate the employee full-time equivalent spent on research. Many institutions replied to this question, indicating that research assistance was often being given by employees who were not formally budgeted for this function. Table XVI makes the breakdown of 210 responses wherein a full-time equivalent of 421 employees was recorded. Universities again claimed a great preponderance with 340 of the total.

A trend seems to be developing in which universities budget more professional talent and more employee assistance to the research function in education than all other institutions combined. This trend is given substantiation by replies to questions which now follow.

Student Research Assistance

Traditionally students have been able to gain research experience on projects under the direction of faculty members. One study cited in Chapter II suggested that such experience may be even more valuable to a later research

TABLE XVI

ESTIMATED FULL-TIME EQUIVALENT OF EMPLOYEE TIME SPENT ON RESEARCH BY TYPE OF INSTITUTION

Type of Institution Estimated Full-time Equivalent Employees	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	125	34	70	9	12
1-3	73	25	27	11	10
4-10	7	6	0	0	1
11-50	2	1	1	0	0
51-100	3	3	0	0	0
Total Responses	210	69	98	20	23
Total Full-time Equivalent	421	340	49	13	19
Mean Full-time Equivalent	2.00	4.92	.50	.65	.82
Median Full-time Equivalent	0.00	1.00	0.00	1.00	0.00

career than much of the course work required. With proper guidance, inspiration and motivation provided by dedicated professors, students may be led into worthwhile lifetime research careers. An attempt was made to discover the extent to which students were being employed in research work by respondent institutions. A total of 274 institutions answered the three questions which dealt with students. Two hundred sixty-one of these reported graduate students employed, and 259 reported undergraduates employed. In the three tables which follow this discussion, the reader may note that the total of undergraduate and graduate students does not equal the number of all students employed in research work. The reason is that some institutions did not break down the total of these students into categories of graduate and undergraduate. Nevertheless, in the 274 institutions which did reply, a total of 1,961 students were reported for an average of 7.12 students per institution. Universities claimed nearly four-fifths of all students, and 88% of all graduate students employed in research. Because there were fewer undergraduate students reported, the table which deals with undergraduates is done in brief form.

The university commitment of human resources to educational research far exceeds the commitment of all other institutions in terms of faculty, employees, and students.

Even institutions which approach and exceed average university size do not generally demonstrate such commitment.

Faculty Interest in Research

Preceding parts of this chapter have dealt with the quantitative commitment in human resources made by respondent institutions to the educational research function. At this point it is appropriate to look at one possible qualitative measure. Research quality may be closely associated with interest in research. No attempt will be made here to prove such a correlation; however, questions concerning faculty research interest which were built into the questionnaire may give some indication of relative quality. The four measures of research interest are faculty membership in research associations, faculty officership or membership on a research association committee, faculty affiliation with Regional Research Laboratories, and faculty affiliation with Research and Development Centers.

Faculty membership in research associations. Research associations are theoretically comprised of people who have a greater than average interest in research. Their willingness to join with others having like interests in conferences and meetings, to constructively criticize the work of other members, and to offer their own work for discussion and analysis by the membership indicates a substantial

TABLE XVII

NUMBER OF STUDENTS EMPLOYED IN RESEARCH WORK BY TYPE OF INSTITUTION

Type of Institution Students Employed	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	155	32	94	15	14
1-3	38	14	12	5	7
4-10	32	18	7	4	3
11-20	26	15	6	1	4
21-30	8	6	1	0	1
31-40	4	4	0	0	0
41-50	5	3	1	1	0
51-100	3	3	0	0	0
100-200	3	3	0	0	0
Total Responses	274	98	121	26	29
Total Students Employed	1,951	1,511	233	98	109
Mean Students Employed	7.12	15.41	1.92	3.76	3.75
Median Students Employed	0.00	5.00	0.00	0.00	1.00

TABLE XVIII

GRADUATE STUDENTS EMPLOYED IN RESEARCH WORK BY TYPE OF INSTITUTION

Type of Instituion Graduate Students Employed	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	168	31	104	17	16
1-3	33	17	6	4	6
4-10	26	15	4	1	6
11-20	16	14	0	1	1
21-30	6	5	1	0	0
31-40	5	4	0	1	0
41-50	2	2	0	0	0
51-100	2	2	0	0	0
101-150	3	3	0	0	0
Total Responses	261	93	115	24	29
Total Students Employed	1,451	1,282	57	54	58
Mean Students Employed	5.56	13.78	.50	2.25	2.00
Median Students Employed	0.00	3.00	0.00	0.00	0.00

TABLE XIX

UNDERGRADUATE STUDENTS EMPLOYED ON RESEARCH

Type of Institution	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Total Responses	259	86	120	24	29
Total Students	454	176	178	44	56
Mean Students	1.75	2.05	1.48	1.83	1.93
Median Students	0.00	0.00	0.00	0.00	0.00

interest in high quality educational research. Two-hundred seventy-five institutions reported a total faculty membership of 2,383 in research associations. The proportion of university faculty members who participated was higher than in teachers colleges or "others," but was exceeded in turn by the proportion of liberal arts college faculty members. The relatively greater size of universities, however, produced a much larger average membership. Table XX sets forth the figures reported.

From Table XXI it can be deduced that more university faculty members are participating in research associations and that more of them hold an office or committee membership in these associations. Of the total of 392 office holders or committee members discovered by the survey, 237 were reported by universities. The potential influence of university faculty members upon research associations is relatively high in relation to the proportion of their faculty size.

Faculty affiliation with government research centers. Recent congressional actions have created laws providing for the development of two major types of government research centers. They are the Regional Research Laboratories and the Research and Development Centers, and they have depended heavily upon institutions of higher education for professional manpower. One measure of institutional

TABLE XX

FACULTY MEMBERSHIP IN RESEARCH ASSOCIATION BY TYPE OF INSTITUTION

Type of Institution	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Total Responses	275	100	120	25	30
Total Faculty Membership	2,383	1,437	480	226	240
Mean Faculty Membership	8.67	14.37	4.00	9.04	8.00
Median Faculty Membership	3.00	6.00	2.00	3.00	5.00

TABLE XXI

FACULTY HOLDING OFFICE OR COMMITTEE MEMBERSHIP IN A RESEARCH ASSOCIATION

Type of Institution	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Total Responses	262	92	119	22	29
Total Faculty Holding Office	392	237	59	66	30
Mean Faculty Holding Office	1.50	2.57	.49	3.00	1.03
Median Faculty Holding Office		1.00	0.00	0.00	0.00

research quality might be the extent to which members of the faculty have been invited to affiliate with government research centers. It is certainly a measure of faculty interest in educational research. Tables XXII and XXIII provide an overview of the faculty affiliations reported by deans. Their replies indicate that 416 faculty members are associated with Regional Research Laboratories, and that universities provide the great majority of these. The figures in Table XXIII indicate that of 333 faculty members who have become affiliated with Research and Development Centers, more than half were reported by universities. Teachers colleges, however, average more members per institution who have affiliated with Research and Development Centers than do universities, but because fewer teachers colleges responded, their total affiliations number less than half those found in universities.

Chapter II pointed out that government research plans envisioned a vast pool of necessary manpower. It further emphasized the critical shortage of educational researchers now existing and the limited nature of training programs to develop additional researchers. Here it has been shown that universities are currently providing the greatest number of faculty researchers to serve the government research centers. The over-all situation is still highly critical, for the 303 responding institutions

TABLE XXII

FACULTY CURRENTLY AFFILIATED WITH REGIONAL RESEARCH LABS BY TYPE OF INSTITUTION

Type of Institution Faculty Affiliated	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	127	25	81	14	7
1	75	24	33	5	13
2	30	15	7	4	4
3	20	14	3	0	3
4	10	8	1	1	0
5	7	3	0	0	4
6-10	11	7	2	2	0
11-20	2	2	0	0	0
21-30	1	1	0	0	0
Total Responses	283	99	127	26	31
Total Faculty Affiliated	416	259	74	33	50
Mean Faculty Affiliated	1.47	2.61	.58	1.26	1.62
Median Faculty Affiliated	1.00	2.00	0.00	0.00	0.00

TABLE XXIII

FACULTY CURRENTLY AFFILIATED WITH RESEARCH/DEVELOPMENT CENTERS BY TYPE OF INSTITUTION

Type of Institution Faculty Affiliated	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	185	56	97	18	14
1	45	14	20	3	8
2	20	6	6	4	4
3	8	1	4	0	3
4	6	6	0	0	0
5	3	1	0	0	2
6-10	4	4	0	0	0
11-25	6	6	0	0	0
26-60	1	0	0	1	0
Total Responses	278	94	127	26	31
Total Faculty Affiliated	333	183	44	71	35
Mean Faculty Affiliated	1.20	1.94	.35	2.73	1.12
Median Faculty Affiliated	0.00	0.00	0.00	0.00	1.00

reported only 749 faculty members affiliated with government research centers. Even if this figure were to be doubled or tripled, the pool of research talent currently working in government programs would be small compared to the needs reported earlier. It is therefore important to try to ascertain whether institutions of higher education are endeavoring to meet research training needs.

Institutional Commitment to the Training of Researchers

The training of educational researchers is normally associated with higher education, and it is logical that the institutions to whom this questionnaire was sent should be charged with the responsibility. Whether they are carrying it out adequately was one concern of this study; consequently, two questions dealt with the training of future educational researchers. Replies to the first are tabulated in Table XXIV. Deans were asked if their institutions had programs for the development of young faculty members as educational researchers. By more than a 6 to 1 margin they said, "No." Of the 38 existing programs reported, 25 were found in universities.

TABLE XXIV

PROGRAMS TO DEVELOP INSTITUTIONS WITH FACULTY AS EDUCATIONAL RESEARCHERS

	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	38	25	6	0	7
No	254	76	127	28	23
Total Responses	292	101	133	28	30

The situation might be more satisfactory if it were clear that programs were under development in a large proportion of the institutions not presently attempting to train educational researchers. This is clearly not the case portrayed in Table XXV. While 254 institutions had reported no research training program, only 47 indicated that they were planning one for the near future. Although this would more than double the number of programs in existence, it would probably fall far short of meeting the need for educational researchers.

TABLE XXV

INSTITUTIONS PLANNING PROGRAMS TO DEVELOP EDUCATIONAL RESEARCHERS

Totals		Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	47	24	9	10	4
No	197	50	111	18	18
Total Responses	244	74	120	28	22

Employment of New Educational Researchers

While institutions might not find it economically feasible to develop an entire program for the training of educational researchers, it should be possible for many to hire one or more faculty members whose prime function would be educational research. An institution with any commitment to educational research should find this a reasonable way to meet at least part of its obligation.

The deans were asked if they planned within the next year to hire additional faculty members whose principal function would be educational research. Their replies are tabulated in Table XXVI. Fewer than one-fourth of the deans reported that they were planning to hire such faculty members. Of the 68 institutions which had plans, 47 were universities. Table XXVII reveals the small number of faculty to be hired for full-time research. All institutions reported a total of just 67, for an average of approximately one researcher to be hired for every five institutions.

TABLE XXVI

INSTITUTIONS PLANNING TO HIRE FACULTY FOR EDUCATIONAL RESEARCH

	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	68	47	9	6	6
No	224	53	125	21	25
Total Responses	292	100	134	27	31

TABLE XXVII

FACULTY TO BE HIRED FOR FULL-TIME RESEARCH BY TYPE OF INSTITUTION

Type of Institution Faculty to Be Hired	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	252	72	130	23	27
1	23	16	3	2	2
2	10	6	0	2	2
3	4	3	1	0	0
4	3	3	0	0	0
Total Responses	292	100	134	27	31
Total Faculty to Be Hired	67	49	6	6	6
Mean Faculty to be Hired	.23	.49	.05	.23	.19
Median Faculty to Be Hired	0.00	0.00	0.00	0.00	0.00

A different picture is presented in Table XXVIII, which deals with faculty members to be hired for part-time research. Though the total of 213 is still small, it is a gain over the full-time researcher situation. In this case, roughly two part-time researchers will be hired for every three institutions queried.

Summary of Human Resources for Educational Research

No other type of institution approaches the university in commitment of human resources to educational research. While teachers colleges, liberal arts colleges, and "other" institutions may slightly surpass universities in a few categories, the total university commitment is vastly greater. Nor did the responses to this survey indicate that universities feel they have reached their capacity. In answering almost every question which dealt with plans for the future, universities indicated more extensive future efforts both in total and on the average. Admittedly, this may be a function of sheer size, for universities reported a larger average student body. They did not, however, report larger faculties in their schools and departments of education than either teachers colleges or "other" institutions. The university atmosphere apparently motivates schools of education on university campuses toward greater research commitment and effort. Whatever the case may be, universities are not ready to relax,

TABLE XXVIII

FACULTY TO BE HIRED FOR PART-TIME RESEARCH BY TYPE OF INSTITUTION

Type of Institution Faculty to Be Hired	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	232	62	125	22	23
1	25	10	6	3	6
2	14	10	2	0	2
3	4	3	0	1	0
4	2	2	0	0	0
5	4	4	0	0	0
6-10	4	4	0	0	0
11-20	4	4	0	0	0
21-30	1	1	0	0	0
Total Responses	290	100	133	26	31
Total Faculty to Be Hired	213	187	10	6	10
Mean Faculty to Be Hired	0.73	1.87	.08	.23	.33
Median Faculty to Be Hired	0.00	0.00	0.00	0.00	0.00

since their plans provide for extensive growth in the area of educational research.

III. PHYSICAL FACILITIES RESOURCES FOR EDUCATIONAL RESEARCH

Only dedicated efforts can overcome a poor environment for research work. While history contains examples of researchers who accomplished near miracles under adverse circumstances, one can only wonder what might have been accomplished had the research environment been at least adequate. In this study physical facilities include space, equipment and special arrangements for a laboratory school in which to work. Though educational research may be carried on without any one of these factors, certainly it will be enhanced and made more feasible by the availability of them all.

Electronic Data Processing

Thirty years ago researchers were forced to hand tabulate masses of data gathered through their research efforts. During the decade of the 1940's, punch card equipment made research data much easier to analyze. The decades of the 50's and 60's have ushered in the computer age, with high speed data processing now making feasible studies which earlier could never have been attempted. Instead of having to generalize from small samples, it now becomes possible for a researcher to utilize almost an entire population. Certainly, he can survey so large a sample that his final results should be open to little question. Consequently, deans were asked how many on-campus computers were presently available to staff and students. The results of their replies are presented in Table XXIX.

Two hundred eighty-seven responses were received, and these indicated that 299 computers were in operation on-campus. Two-thirds of the computers were found on university campuses, while more than half the liberal arts colleges and teachers colleges had none, a lack severely limiting the types of research which can be carried out.

The mere presence of the computer does not mean that an educational researcher may have access to it. To ascertain whether these computers were actually usable by educational researchers, the deans were asked how many on-campus computers were presently available to staff and students. Table XXX presents a tabulation of the replies, and indicates that availability was generally very good. Of the 299 on-campus computers, 268 were actually made accessible to staff and students of schools of education. The only apparent lack of computer availability seems to occur on university campuses. Here the deans indicate that only 176 out of the 201 computers are actually available to their staff and students. "Other" institutions lost a

TABLE XXIX

HIGH SPEED COMPUTERS IN OPERATION ON CAMPUS

Type of Institution Computers in Operation	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	114	7	81	19	7
1	115	41	45	7	22
2	33	27	5	0	1
3	11	9	2	0	0
4	5	5	0	0	0
5-12	9	8	0	1	0
Total Responses	287	97	133	27	30
Total Computers	299	201	61	13	24
Mean Computers	1.04	2.07	.46	.48	.80
Median Computers	1.00	2.00	0.00	0.00	1.00

TABLE XXX

COMPUTERS AVAILABLE TO STAFF AND STUDENTS ON CAMPUS

Type of Institution Computers Available	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	113	7	79	18	9
1	120	51	43	7	19
2	28	23	4	1	0
3	10	7	2	1	0
4	5	4	1	0	0
5-12	5	5	0	0	0
Total Responses	281	97	129	27	28
Total Computers	268	176	61	12	19
Mean Computers	.95	1.81	.47	.44	.68
Median Computers	1.00	1.00	0.00	0.00	1.00

higher percentage of computers which were present but not usable by educational researchers, though the loss in actual numbers was smaller.

Computer utilization. Availability of a computer is extremely important to an educational researcher, but means nothing unless the computer is actually used. The deans were asked on how many research projects the faculty had used computers in the last year. The replies presented graphically in Table XXXI show that 1,121 projects utilized computers during the past year. Universities exceeded the other three categories of institutions by a ratio of more than four to one in computer projects, even though they had only about twice as many computers available. Perhaps university research projects were more complex, or simply larger in size, requiring more extensive use of computers to process data. Whatever the situation, the universities do make twice as much use of each computer available as do all other categories of institutions.

Additional computers. The deans were asked whether they planned to arrange for the availability of more computers to staff and students. Even though an institution possessed a computer, others might be necessary. Scheduling problems might have reduced the availability of present computers, the limited capabilities of machines now available might require improved models, or the interest of staff

TABLE XXXI

RESEARCH PROJECTS USING COMPUTERS IN THE LAST YEAR

Type of Institution Projects Using Computers	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	162	19	106	21	16
1-5	68	40	18	4	6
6-10	13	9	0	2	2
11-25	19	15	0	0	4
26-50	7	6	0	0	1
51-125	3	3	0	0	0
Total Responses	272	92	124	27	29
Total Projects	1,121	918	34	27	142
Mean Projects	4.12	9.97	.27	1.00	4.90
Median Projects	0.00	3.00	0.00	0.00	0.00

and students might have expanded enough to warrant additional computers to meet anticipated greater needs. Almost half the respondents indicated that their institutions did plan to make more computers available. Their replies are illustrated in Table XXXII.

TABLE XXXII

INSTITUTIONS PLANNING TO ARRANGE AVAILABILITY OF MORE COMPUTERS TO STAFF AND STUDENTS

Totals		Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	123	62	31	12	18
No	144	36	86	10	12
Total Responses	267	98	117	22	30

On-campus Schools

The environment for the successful training of teachers has always included some sort of laboratory school arrangement. The training of researchers also requires the use of laboratory schools either on or off-campus. The greater convenience of the on-campus laboratory school suggested an attempt first to discover the institutions which had them. Table XXXIII indicates that only 97 of 291 respondents had any laboratory school, elementary, second-

TABLE XXXIII

INSTITUTIONS OPERATING ON-CAMPUS SCHOOLS

Type of Institution	Total	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Elementary	91	34	23	13	21
Secondary	38	18	7	7	6
Total Elementary or Secondary or Both	97	37	24	25	21
No On-campus School	194	64	111	11	8
Total Responses	291	101	135	26	29

ary or both. On-campus schools were most prevalent in teachers colleges and the "others" category, though not all teachers colleges had a laboratory school on-campus. Institutions in the "other" category had the greatest number of on-campus schools per institution, which might be partly explained by the fact that many of these schools are former teachers colleges which increased in size and scope over the last two decades.

Research projects in on-campus schools. A mean of slightly more than two educational research projects have been done in on-campus laboratory schools during the past year. Table XXXIV indicates that 198 projects were done in the 97 laboratory schools. While teachers colleges average more projects per institution, they do not average more projects per laboratory school. In only 37 laboratory schools universities conducted 104 projects, while teachers colleges and "other" institutions were conducting 41 and 34 projects respectively in 15 and 21 laboratory schools.

Research Projects in Off-Campus School Systems

Lacking a laboratory school on campus, an institution may still make research arrangements with school systems nearby. The deans were asked whether their institutions had arranged with school systems off-campus for conducting research projects. Their replies, set forth in

TABLE XXXIV

RESEARCH PROJECTS CONDUCTED IN ON-CAMPUS SCHOOLS LAST YEAR

Type of Institution Research Projects	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	191	62	98	16	15
1-3	40	19	10	0	11
4-10	17	10	0	5	2
Total Responses	248	91	108	21	28
Total Projects	198	104	19	41	34
Mean Projects	.80	1.14	.17	1.95	1.21
Median Projects	0.00	0.00	0.00	0.00	0.00

Table XXXV, show that 166 institutions do have arrangements with off-campus school systems for conducting research. This situation is more satisfactory than that indicated by the answers to the earlier question concerning use of on-campus schools.

TABLE XXXV

INSTITUTIONS CONDUCTING OFF-CAMPUS RESEARCH PROJECTS IN SCHOOL SYSTEMS IN THE LAST YEAR

Totals		Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	166	83	51	13	19
No	132	22	84	14	12
Total Responses	298	105	135	27	31

Furthermore, universities which lack on-campus schools here show that they have extended their efforts to make arrangements off-campus. They have conducted 454 projects of the 615 reported by all institutions. Their mean of more than four and one-half projects is double the mean of any other category. Liberal arts colleges show a very small involvement whether one considers on-campus or off-campus schools.

TABLE XXXVI

RESEARCH PROJECTS CONDUCTED IN SCHOOL SYSTEMS OFF-CAMPUS LAST YEAR

Type of Institution Projects Conducted	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	149	29	91	15	14
1-3	85	36	31	7	11
4-10	39	25	5	4	5
11-20	6	5	0	0	1
21-30	2	2	0	0	0
31-40	0	0	0	0	0
41-49	2	2	0	0	0
Total Responses	283	99	127	26	31
Total Projects	615	454	70	26	65
Mean Projects	2.17	4.58	.55	1.00	2.10
Median Projects	0.00	2.00	0.00	0.00	1.00

Shortages Blocking Research Assistance to School Systems

Many institutions feel a commitment to serve school systems by conducting surveys, studies or research projects. In some cases, these are paid for by the school systems, but a lack of funds or faculty may force refusal of requests for help. Consequently, the deans were asked whether they had been forced to refuse requests for research help from off-campus school systems due to shortages of either funds or faculty. Their replies, in Tables XXXVII and XXXVIII, indicate that it is most often a shortage of faculty which blocks research assistance, though more than 40 per cent of the respondents refused research help because of a shortage of funds. These figures are most significant, for they indicate refusals to help school systems in cases of expressed need. Ideally, these requests for help should seldom be refused.

TABLE XXXVII

INSTITUTIONS FORCED TO REFUSE RESEARCH HELP TO SCHOOL SYSTEMS BECAUSE OF A SHORTAGE OF FUNDS

Totals		Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	112	57	29	13	13
No	157	37	90	13	17
Total Responses	269	94	119	26	30

TABLE XXXVIII

INSTITUTIONS FORCED TO REFUSE RESEARCH HELP TO SCHOOL SYSTEMS BECAUSE OF A SHORTAGE OF FACULTY

Totals		Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	138	70	35	15	18
No	134	27	86	10	11
Total Responses	272	97	121	25	29

Working Space for Research

An elemental requirement for research work is space. Research has been carried on in the homes of researchers, in garages, in attics and in other unsatisfactory locations. An institution which desires quality research will provide space in which to work. No attempt will be made here to set a standard, but the current situation will be presented. The deans were asked what approximate percentage of present building space is presently assigned to research work. From Table XXXIX it can be seen that the mean of their replies was slightly more than three percent. Having established no standard for adequate research space, only a comparison can be made. Universities devoted a mean of 7.44% of their building space to educational research, more than double the percentage reported by any other institutional category. Teachers colleges, with a mean of three percent, were next.

Recognizing that many institutions might have space available which was not now assigned for research, the deans were asked what approximate percentage of present building space could still be assigned for research work. Table XL permits an analysis of the replies. The deans indicate that space is available which is not being used. The mean percentage of unused space in all institutions is 4.15. Teachers colleges show the largest amount available with exactly

TABLE XXXIX

PERCENTAGE OF BUILDING SPACE PRESENTLY DEVOTED TO EDUCATIONAL RESEARCH

Type of Institution Percentage of Space	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	154	28	98	14	14
1-10	107	49	30	11	17
11-25	13	12	0	1	0
26-50	6	6	0	0	0
Total Responses	280	95	128	26	31
Total Percentages	956	707	109	78	62
Mean Percentages	3.41	7.44	.85	3.00	2.00
Median Percentages	0.00	5.00	0.00	0.00	1.00

TABLE XL

PERCENTAGE OF POTENTIAL RESEARCH SPACE IN BUILDINGS NOT PRESENTLY SO ASSIGNED

Type of Institution Percentage Potential Space	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	154	58	68	13	15
1-10	74	23	35	5	11
11-25	15	6	2	5	2
26-50	7	4	2	0	1
Total Responses	250	91	107	23	29
Total Percentages	1,037	403	358	138	138
Mean Percentages	4.15	4.43	3.34	6.00	4.76
Median Percentages	0.00	0.00	0.00	0.00	0.00

six percent. A comparisen with Table XXXIX indicate that there is even more space available than is presently being used. Space is a high cost resource for research, and potential exists which ought to be put to work in the near future.

Research space in new buildings. What is planned for research space in the new buildings being developed for schools of education across the nation? The deans were asked if they had a building program underway for the department. Table XLI indicates that 107 schools were planning a new building, while Table XLII indicates that more than five percent of this new space will be devoted to research work. Certainly, this is an improvement over the situation in existing buildings, although it is less than satisfactory when compared to the seven percent of present building space which now is being or could be used for research.

Summary of Physical Resources for Education

Research

In terms of commitment of physical resources, universities show a heavier emphasis on every factor than do any other institutions. Not only do they commit more facilities, but they tend to use these facilities more extensively. Though they have had to turn down a larger proportion of requests for research help from school systems off-campus, universities still have managed to conduct more projects than any other institutional category. They are dedicating the largest percentage of space to research of any of the four categories of institutions, and possess substantial space which could still be committed to research. Only the category "other" institutions has a higher percentage of building programs underway for departments of education, and will devote more new space than universities to the research function.

TABLE XLI

BUILDING PROGRAMS UNDERWAY FOR DEPARTMENTS OF EDUCATION

	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	107	52	28	8	19
No	189	53	106	18	12
Total Responses	296	105	134	26	31

It is vital that laboratory schools be in the vanguard of improvement of educational techniques. In order to prevent repetition of past mistakes and continuation of ineffective procedures, educational research should be carried on in these natural laboratories now too seldom employed

TABLE XLII

PERCENTAGE OF NEW BUILDING SPACE TO BE DEVOTED TO RESEARCH

Type of Institution Percentage of Space	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	194	54	108	20	12
1-10	44	18	13	3	10
11-25	26	14	4	2	6
26-50	10	9	0	0	1
51-75	1	1	0	0	0
76-100	3	1	0	0	2
Total Responses	278	97	125	25	31
Total Percentages	1,616	1,005	163	53	395
Mean Percentages	5.81	10.36	1.30	2.12	12.74
Median Percentages	0.00	0.00	0.00	0.00	5.00

at many institutions.

While teachers colleges and "other" institutions alternate for second position, universities are now committing and plan to commit the most physical resources to educational research. They are supporting the greater faculty commitment they have made with facilities which are more nearly adequate to the task. So far, liberal arts colleges appear to be lowest in the commitment of every type of resource to educational research. This information should largely demolish the contention mentioned earlier that only institutions which were involved in educational research reported. Figures indicate that a large percentage of the respondent liberal arts colleges were only slightly involved in educational research.

IV. FINANCIAL RESOURCES FOR EDUCATIONAL RESEARCH

Human and physical resources are vital to successful research effort. The fact that these resources have been committed indicates that a third resource has been also committed. That third vital resource is money. A number of questions were designed to determine the extent of the monetary commitment made by institutions to educational research work. These questions were constructed to analyze the budgetary commitment, the sources of income, and the functions for which money was expended for research.

Because of the widely varying budgetary plans in use, only a broad picture could be obtained.

Research Budgets

Deans were asked what percentage of the total (school or department of education) budget was devoted to educational research. Table XLIII graphically illustrates the replies. Approximately one-tenth of all institutions made no effort to answer this question, and 153 stated that none of the budget was devoted to educational research. The remaining 123 schools spent a mean of 4.26% of the school of education budget on research. Universities were high with 9.86%, while the "others" category held the second position with a mean of 2.63%. Earlier tables have indicated that universities often double the resource commitment of any other institutional category, but here their commitment is nearly four times that of all other institutions. By quadrupling research investment in proportion to their budgets, universities generally doubled or tripled the human and physical resources which were then committed to educational research. The situation suggests that university budgets may be smaller than school of education budgets for other institutions, or that they may be paying more for the research resources used. If the former is true, then university commitment is to be admired. If the latter, then universities are either striving to buy quality

TABLE XLIII

PERCENTAGE OF BUDGET DEVOTED TO RESEARCH BY SCHOOLS OF EDUCATION

Type of Institution Percentage of Budget	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	153	27	97	15	14
1-10	95	40	30	10	15
11-25	17	13	3	0	1
26-50	8	7	1	0	0
51-75	3	3	0	0	0
Total Responses	276	90	131	25	30
Total Percentages	1,175	887	178	31	79
Mean Percentages	4.26	9.86	1.36	1.24	2.63
Median Percentages	0.00	3.00	0.00	0.00	1.00

or are spending less carefully than other institutions. The questionnaire does not permit selection of the correct alternative in this situation. It is clear, however, that universities are committing three to six times more of the expensive human resources to educational research, which may in turn be the reason for the far greater percentage of the university school of education budget committed to research work.

Sources of Research Funds

The five principle sources of research money are institutional sources, wherein money is invested by the university or college from its own budget to conduct educational research, the federal government which has become heavily involved in expenditures for educational research through a myriad of government programs, state established and funded educational research programs, private foundations and individuals which have been leaders in the funding of educational research, and other sources involving private contract research done to solve specific problems for particular school consumers. While other sources of research funds exist, they are so obscure as to be generally unknown.

Table XLIV, more complex than preceding tables, attempts to illustrate the mean percentages of research funds received from five sources by the four categories of institutions. The attempt to compile a mass of data from several computer tables has resulted in a need for some explanation. To help make this table clear, note that universities received 21.34% of their research money from institutional sources. Immediately below this figure in parentheses appears a numerical expression which means that out of 89 responding schools 54 received some money from institutional sources. A total of all the percentage figures reported by these 54 schools was computed and divided by 89 to produce the mean figure of 21.34%.

Further examination of the table indicates that more universities received research money from the federal government than from any other source, and that this source also produced the highest mean percentage of the research budget for universities. Liberal arts colleges most often received institutional money, which caused this source to bulk largest for them. The federal government also proved important to teachers colleges and "other" institutions both of which used federal funds more often and in greater mean percentage than any other source. The state was the second most important source of funds to "other" institutions, and third most important to teachers colleges. Private sources, which ten or fifteen years ago were of great importance to educational research, have fallen to fourth position, followed far behind by other sources.

TABLE XLIV

MEAN PERCENTAGES OF RESEARCH FUNDS RECEIVED FROM VARIOUS SOURCES

Type of Institution Source of Research Funds	Universities	Liberal Arts Colleges	Teachers Colleges	Others	Mean for all Institutions
Institutional Sources	21.34% (54 of 89)	18.31% (29 of 120)	15.18% (6 of 22)	11.07% (10 of 29)	18.27% (99 of 260)
Federal Government	39.15 (58 of 89)	5.88 (12 of 119)	24.50 (8 of 22)	31.86 (15 of 29)	21.80 (93 of 259)
State Government	11.56 (35 of 89)	2.29 (6 of 119)	13.82 (8 of 22)	15.03 (11 of 29)	7.85 (60 of 259)
Private Sources (Foundations and Individuals)	5.82 (25 of 89)	5.84 (13 of 121)	0.91 (2 of 22)	2.62 (7 of 29)	5.06 (47 of 261)
Other Sources	0.97 (6 of 89)	0.82 (1 of 120)	0.00 (0 of 22)	4.45 (2 of 29)	1.21 (9 of 260)
Total Possible Institutions	105	139	28	31	303

3

Critics who fear an over-involvement by the federal government need only study this table to see the healthy balance among institutional, federal, and state sources for research funds. Sixteen universities and 18 liberal arts colleges chose not to respond to this group of questions, leaving the answer spaces blank. Possibly they were not receiving research funds from any source, but it would have been helpful to indicate this fact.

Expenditures for Research

In order to determine how research money is spent, eight expenditure categories were established. Seven of these were rather specific; the eighth provided for miscellaneous expenditures. Fewer institutions responded to these queries than those which dealt with sources of research funds. This is unfortunate, since it is as important to know where the money went as the source from which it was received. A study of Table XLV will show that roughly half the universities are expending money for faculty salaries and administrative, secretarial and clerical staff. Less than one-fourth of the liberal arts colleges are making similar expenditures, one-fourth to one-half of the teachers colleges are expending money for these purposes, and roughly half the "other" institutions are making such expenditures. The only other category in which a significant number of the institutions are spending money

TABLE XLV

MEAN PERCENTAGE EXPENDITURES FOR RESEARCH SALARIES, EQUIPMENT, FACILITIES AND SERVICES

Type of Institution Mean Expenditure For	Universities	Liberal Arts Colleges	Teachers Colleges	Others	Mean for all Institutions
Faculty Salaries	37.64% (51 of 78)	12.85% (25 of 117)	28.79% (8 of 19)	26.19% (12 of 27)	23.62% (96 of 241)
Administrative and Secretarial Staff	9.99 (52 of 78)	6.14 (23 of 117)	7.11 (4 of 19)	13.56 (13 of 27)	8.29 (92 of 241)
Consultants	2.46 (30 of 78)	0.91 (9 of 116)	0.56 (1 of 18)	1.07 (7 of 27)	1.41 (47 of 239)
Equipment	5.65 (40 of 78)	3.70 (15 of 116)	1.68 (3 of 19)	5.11 (10 of 27)	4.33 (68 of 240)
Facilities	2.88 (22 of 78)	1.52 (11 of 116)	0.89 (2 of 19)	2.78 (8 of 27)	2.05 (43 of 240)
Related Services	4.29 (24 of 78)	1.34 (7 of 115)	0.00 (0 of 18)	4.15 (9 of 27)	2.53 (40 of 238)
Student Research Assistantships	10.19 (37 of 78)	0.89 (7 of 115)	2.89 (3 of 19)	2.11 (7 of 27)	4.22 (54 of 239)
Other	1.74 (9 of 78)	0.91 (2 of 114)	0.00 (0 of 18)	4.22 (3 of 27)	1.49 (14 of 237)
Total Possible Institutions	105	139	28	31	303

is the universities' expenditure of 10% of their budgets for student research assistantships. The other three categories of institutions each spend less than three percent for student research assistantships. The highest mean expenditure reported is 37.64% of the research budget spent by universities for faculty salaries. The only instance in which mean expenditures by universities are exceeded involves expenditures by "other" institutions for administrative, secretarial and clerical staff. In all categories, the university mean exceeds the overall mean substantially. These figures confirm those illustrated in Table XLIII regarding the budget percentages devoted to research by schools of education.

Expenditure for Research Travel

Fewer than 250 institutions gave usable replies to two questions dealing with money expended for travel related to research. Slightly more than $405,000 was reported spent for travel to research conferences and for travel to discuss research proposals or carry on negotiations. In both Tables XLVI and XLVII some doubt about the entries for teachers colleges is justified. One New Jersey institution reported an expenditure for each of these types of travel of $40,000. Since the institution was not among those recognized by any earlier study as a leader in educational research, and certainly did not appear one from its replies

TABLE XLVI

EXPENDITURES FOR TRAVEL TO RESEARCH CONFERENCES

Type of Institution	Totals	Universities	Liberal Arts Colleges	Teachers* Colleges	Others
Total Responses	226	75	108	16	27
Total Expenditures	$282,750	$195,275	$23,865	$51,750	$11,860
Mean Expenditures	$ 1,251	$ 2,604	$ 221	$ 3,234	$ 439

*Note: One response was $40,000, and since it was reported by a school of only medium size which was not among the leading research institutions, the figure may represent nearly half of all professional travel for the faculty, rather than travel to research conferences only.

TABLE XLVII

EXPENDITURES FOR TRAVEL TO DISCUSS RESEARCH PROPOSALS

Type of Institution	Totals	Universities	Liberal Arts Colleges	Teachers* Colleges	Others
Total Responses	216	75	99	17	25
Total Expenditures	$123,145	$70,712	$5,625	$42.250	$4,558
Mean Expenditures	$ 570	$ 943	$ 57	$ 2,485	$ 182

*Note: See explanatory note following Table XLVI. This $40,000 entry from the same institution may represent the balance of all professional travel rather than travel to discuss research proposals only.

to the questionnaire, this figure may be inflated. Possibly it includes money expended for all types of professional travel at the institutions. If this is the case, the effect is to inflate the means and totals in the tables for teachers colleges. With this qualification in mind both tables seem consistent with figures so far discussed, in that universities show higher mean expenditures for research than other categories of institutions. These figures give further indications of the relative importance placed upon research by the four categories of institutions, and re-emphasize the generally greater commitment on the part of universities.

Future Financing for Educational Research

Institutions have so far indicated a number of areas for future research growth. These generally involve human and physical resources of various types. Since money is clearly necessary to any expansion in research activities, the deans were asked whether they planned to expand the financial base for research during the next year. Table XLVIII illustrates their responses, showing that exactly half those who replied did have plans to expand. Only in the case of liberal arts colleges were plans to expand far outnumbered by plans which did not foresee expansion. By a margin of two and one-half to one, universities did plan to expand the financial base for

TABLE XLVIII

INSTITUTIONS PLANNING TO EXPAND THE FINANCIAL BASE FOR RESEARCH

Type of Institution	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Plan to Expand	133	64	34	12	23
Do Not Plan to Expand	133	26	90	10	7
Total Responses	266	90	124	22	30

research, exceeded in this intent only by the category "other" institutions with a ratio of more than three to one. "Other" institutions apparently plan to carry a larger part of the national research burden in the future, which may help to take some of the pressure off the universities. In keeping with their present heavy commitments, universities have substantial plans for the future.

Additional research funds. The deans were asked from what sources additional research funds might be obtained and what percentage of the total increase is projected from each. Their replies are compiled in Table XLIX. Study of this table indicates that the federal government will continue to be called upon for new money in a ratio consistent with what is now being furnished. About 21% of all additional research funds will be obtained from the federal government if institutional plans mature. Not only will the federal government furnish the largest proportion of increased funds, but more schools will be applying for federal money. Following behind the federal government will be institutional sources from which slightly more than 14% of new funds probably will be obtained, somewhat less than the 18% currently being furnished by institutions from their own budgets. The institutions report that they will ask state governments for an increased percentage of research money, while private sources will be called upon for less

TABLE XLIX

MEAN ESTIMATED PERCENTAGE INCREASE BY SOURCE OF TOTAL ADDITIONAL RESEARCH FUNDS PROJECTED

Type of Institution Mean Percent of Total Increase from:	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others	Mean for All Institutions
Institutional Sources		19.59% (45 of 88)	10.48% (21 of 121)	12.70% (5 of 20)	17.70% (12 of 27)	14.55% (83 of 28)
Federal Sources		35.07 (52 of 87)	8.56 (21 of 120)	26.75 (9 of 20)	26.78 (15 of 27)	21.01 (97 of 254)
State Sources		10.05 (30 of 87)	4.38 (12 of 120)	11.05 (5 of 19)	22.58 (12 of 26)	8.71 (59 of 252)
Private Sources		7.37 (27 of 87)	2.69 (11 of 121)	1.32 (1 of 19)	5.38 (5 of 26)	4.47 (44 of 253)
Others Sources		1.10 (6 of 86)	0.35 (2 of 120)	0.00 (0 of 19)	0.77 (2 of 26)	0.63 (10 of 251)
Total Institutions which Projected an Increase in Research Funds	133	64	34	12	23	
Total Institutions which did not Project an Increase in Research Funds	133	26	90	10	7	
Total Institutions upon which Mean Increases by Source Are Computed	266	90	124	22	30	

than is now the case. Other sources which have been furnishing a minute fraction of current research funds will be called upon for even less in the future. An interesting comparison can be made at this point between Table XLIV and Table XLIX. Here the consistency of the means from each of the five sources is pronounced, probably because past experience has indicated that institutions could count on these sources in these proportions, and planning for the future cannot ignore past experience. This table utilizes a format very similar to that introduced in Table XLIV. Beneath each mean percentage given appears a notation indicating the number of institutions out of all responding which projected an increase in research funds from each source. Thus 45 universities out of 88 replying expected increased funds from institutional sources.

Summary of Financial Resources for Educational Research

Universities again demonstrate a deep involvement in educational research. Their commitment of financial resources far exceeds the mean of any other institutional category. They tend to call upon the federal government for more of their research funds than do any other institutions, and to spend more for human resources. Only in the category designated "other" are a greater proportion of institutions planning to expand the financial base for research than among universities. Additional research funds will probably be obtained in roughly the same percentages from each of the five major sources as has been the case in the past.

It is clear that the 133 institutions planning to expand the financial base for research indicate neither a very large nor an extremely powerful commitment to future research efforts. Lacking a supply of trained researchers and training programs to produce new researchers, perhaps this is all that can be expected. Hopefully, when greater numbers of trained educational researchers become available, the commitment to research will grow in proportion.

V. INTERDISCIPLINARY RESOURCES FOR EDUCATIONAL RESEARCH

In Chapter II it was noted that one earlier study contended that interdisciplinary efforts tend to enhance the research environment in an institution. While interdisciplinary cooperation may take numerous forms, the most common probably is the joint appointment in which faculty members hold professorial rank in more than one school or department. In order to measure the strength of this interdisciplinary cooperation, it is possible to determine whether individuals holding joint appointments also receive joint financial support. Another type of interdisciplinary effort which can be measured is the number of joint programs in educational research. The questionnaire concentrated on these three important concerns in investigating interdisciplinary resources for educational research.

Joint Faculty Appointments

The deans were asked how many of the faculty in the school of education held joint appointments in one or more other departments or disciplines. The question was actually divided into three parts. First, they were asked to give the number of those holding a joint appointment in one other department or discipline, then the number of joint appointments in two other departments or disciplines. While deans were also asked to give the number of faculty members holding joint appointments in three or more departments or disciplines, the replies to this question were so few that it will be dealt with only briefly. Tables L and LI present a breakdown of replies to this question. Single joint appointments are not uncommon. Comfortably more than half of the responding institutions indicated that they had them. Universities reported slightly more than five-eighths of all joint appointments, and averaged almost five per institution. This represents about three times as many as were reported in any other category. Universities also reported more education faculty holding joint appointments in two other departments, though these were few in number. Only

TABLE L

EDUCATION FACULTY HOLDING JOINT APPOINTMENT IN ONE OTHER DEPARTMENT OR DISCIPLINE

Type of Institution Faculty Holding a Joint Appointment	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	137	39	63	16	19
1-3	90	31	49	4	6
4-10	42	16	18	3	5
11-25	16	11	2	2	1
26-59	5	5	0	0	0
Total Responses	290	102	132	25	31
Total Joint Appointments	796	490	202	52	52
Mean Joint Appointments	2.74	4.80	1.53	2.08	1.68
Median Joint Appointments	1.00	1.00	1.00	0.00	0.00

TABLE LI

EDUCATION FACULTY HOLDING JOINT APPOINTMENTS IN TWO OTHER DEPARTMENTS OR DISCIPLINES

Type of Institution Faculty Holding Two Joint Appointments	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	252	88	111	24	29
1-3	17	5	10	1	1
4-10	2	2	0	0	0
11-12	2	2	0	0	0
Total Responses	273	97	121	25	30
Total Joint Appointments	58	43	11	3	1
Mean Joint Appointments	0.21	0.33	0.09	0.12	0.03
Median Joint Appointments	0.00	0.00	0.00	0.00	0.00

58 double joint appointments were reported by all institutions, and of these nearly four-fifths were reported by universities.

Only ten triple joint appointments were reported. Of these six were found in universities, three in liberal arts colleges, and one in the category "other" institutions. These figures hold fairly consistent relationship to the proportions of joint appointments reported in the preceding two tables.

It is as common to find faculty members from other departments holding joint appointments in the department of education as it is to find the reverse situation. An examination of Table LII shows that 779 such appointments were reported. Since 796 education faculty members held joint appointments in other departments, the figures are extremely close. In universities fewer other faculty members hold joint appointments with the school of education than education faculty members hold joint appointments in other departments. The ratio in liberal arts colleges is just reversed, with fewer of the education faculty holding joint appointments in other departments than other faculty members holding joint appointments in schools of education.

TABLE LII

OTHER FACULTY HOLDING JOINT APPOINTMENT IN SCHOOL OR DEPARTMENT OF EDUCATION

Type of Institution Other Faculty Holding Joint Appointments	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	138	43	63	13	19
1-3	87	29	42	11	9
4-10	50	20	25	0	1
11-25	12	5	5	1	1
26-50	2	2	0	0	0
51-70	1	1	0	0	0
Total Responses	290	100	135	25	30
Total Joint Appointments	779	399	298	47	35
Mean Joint Appointments	2.69	3.99	2.21	1.88	1.17
Median Joint Appointments	1.00	1.00	1.00	0.00	0.00

Budgetary Support for Faculty Members in Other Departments

It can be argued that a joint appointment is strengthened when salary support is provided by both departments. Consequently, the deans were asked whether the budget of the school of education included salaries and/or other support for faculty members in other departments or disciplines. A study of Table LIII reveals that joint financial support was found far less often than joint appointments. Only 58 institutions reported joint financial support, of which 37 were universities. It seems fairly clear that universities are more committed to joint appointments than are other categories of institutions, though it is obvious that few of the respondents have gone all the way to provide support for joint appointments.

TABLE LIII

SALARY SUPPORT FOR OTHER FACULTY
BY SCHOOLS OR DEPARTMENTS
OF EDUCATION

	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	58	37	14	3	4
No	222	63	111	21	27
Total Responses	280	100	125	24	31

TABLE LIV

OTHER FACULTY PARTLY SUPPORTED BY SCHOOLS OR DEPARTMENTS OF EDUCATION

Type of Institution Other Faculty Partly Supported	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	219	62	109	21	27
1-3	31	17	12	0	2
4-10	15	12	1	1	1
11-25	2	1	0	1	0
26-50	0	0	0	0	0
51-68	1	1	0	0	0
Total Responses	268	93	122	23	30
Total Other Faculty Supported	242	193	22	20	7
Mean Other Faculty Supported	0.90	2.08	0.18	0.87	0.23
Median Other Faculty Supported	0.00	0.00	0.00	0.00	0.00

The deans were also asked how many other faculty members were given salary and/or other support. Table LIV provides a resume of the replies. The total faculty members from other departments who were provided financial support by schools of education was 242, with 193 of these reported by universities. By comparing Table LIV with Table LIII it can be determined that only 49 of the 58 institutions which claim to provide salary support for other faculty members actually reported the number involved.

Educational Research Programs Found in Other Departments

A research project which can draw upon the talents and expertise of professors from several departments would seem to stand a greater chance for success than one limited to professors of education no matter how talented they might be. The deans were asked whether other departments or disciplines in the university have programs in educational research. The replies set forth in Table LV indicate that 112 institutions reported these programs. Fifty-three percent of the responding universities claimed that educational research was being done by departments other than education. Nearly 47% in the 'others' category and 33% of the liberal arts colleges also reported such programs. Educational research outside the department of education was reported by only 17% of the teachers colleges. Looking at this situation another way, 45% of this type of educational research is found in universities. This fact is consistent with the greater interdisciplinary effort evidenced by the larger proportion of joint appointments reported by universities.

TABLE LV

INSTITUTIONS WITH OTHER DEPARTMENTS HAVING PROGRAMS IN EDUCATIONAL RESEARCH

	Totals	Universi-	Liberal Arts Colleges	Teachers Colleges	Others
Yes	112	51	43	4	14
No	168	46	87	19	16
Total Responses	280	97	130	23	30

The deans were asked which other departments have programs in educational research. Their replies are presented in Table LVI. Quite logically the psychology department was reported as most often involved in educational research. The influence of the space age can also be quickly noted by the involvement of the various science departments such as biology, chemistry and mathematics. The interest of the behavioral sciences was again evident with sociology slightly more often involved than the science of mathematics. By combining Table LV with Table LVI, a mean number of programs per institution has been developed.

TABLE LVI

OTHER DEPARTMENTS WHICH HAVE PROGRAMS IN EDUCATIONAL RESEARCH

Type of Institution	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Anthropology	3	3	0	0	0
Art	5	2	1	1	1
Biology	32	12	15	2	3
Business	10	9	1	0	0
Chemistry	30	9	18	1	2
Engineering	13	10	3	0	0
English	18	10	6	1	1
Geography	8	4	3	1	0
Geology	1	1	0	0	0
German	2	1	1	0	0
History	13	6	5	0	2
Journalism	1	1	0	0	0
Mathematics	24	10	8	1	5
Music	7	5	1	1	0
Philosophy	6	5	1	0	0
Physics	17	5	9	1	2
Political Science	10	8	2	0	0
Psychology	51	30	15	2	4
Romance Languages	4	2	1	0	1
Sociology	29	15	10	2	2
Speech	13	11	1	0	1
Others	21	11	5	0	5
Total Programs	318	170	106	13	29
Mean per Institution	1.13	1.75	.81	.56	.97

The computation reveals that a mean of 1.13 programs were found in the 280 institutions which replied. The results also re-emphasize the greater interdisciplinary effort of universities earlier made evident by their more numerous joint appointments.

Joint Programs in Research

Having discovered a large number of institutions with educational research being done by departments other than education, the deans were asked how many of these programs were done jointly with the department of education, and how many were separate from it. The replies to these two questions are set forth in Tables LVII and LVIII. Note that more programs in educational research were being carried on separately from the school or department of education than were being done jointly. In two categories of institutions separate programs were far more common. In liberal arts colleges and "other" institutions, 101 separate programs were found while only 43 joint programs were reported. Universities had fewer separate programs than joint ones, while teachers colleges showed little difference.

Summary of Interdisciplinary Resources for Education Research

It has been shown that joint appointments are not rare among the institutions which replied to this survey.

TABLE LVII

JOINT PROGRAMS IN EDUCATIONAL RESEARCH

Type of Institution Interdepartmental Programs	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	201	58	104	18	21
1-3	42	24	11	1	6
4-10	11	8	2	1	0
11-18	2	1	1	0	0
Total Responses	256	91	118	20	27
Total Programs	160	111	36	6	7
Mean Programs	0.63	1.22	0.31	0.30	0.26
Median Programs	0.00	0.00	0.00	0.00	0.00

TABLE LVIII

EDUCATIONAL RESEARCH PROGRAMS SEPARATE FROM SCHOOL OR DEPARTMENT OF EDUCATION

Type of Institution Separate Research Programs	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	177	55	88	17	17
1-3	47	22	16	3	6
4-9	21	9	8	0	4
Total Responses	245	86	112	20	27
Total Programs	203	98	70	4	31
Mean Programs	0.83	1.14	0.63	0.20	1.15
Median Programs	0.00	0.00	0.00	0.00	0.00

There seems to be a fair balance between the joint appointment of education faculty members to other departments, and the joint appointment of other faculty members to the department of education. There is also a much smaller number of double and triple joint appointments, indicating that these are reserved for exceptional professors under somewhat unusual circumstances. However, in few cases has the commitment to joint appointments been strong enough to command joint salary support. Only about one out of seven professors holding joint appointments receive joint salary or financial support. Furthermore, there are more educational research programs being done separately from the school of education than are being done jointly with it. Other departments most commonly having programs in educational research are

VII. POLICIES, ATTITUDES AND ASPIRATIONS OF THE INSTITUTIONS TOWARD EDUCATIONAL RESEARCH

The fact that an institution has provided research-trained faculty, supporting employees, student assistants, physical facilities, and financial resources, as well as creating an interdisciplinary atmosphere testifies to its commitment to educational research. Possibly, some institutions have been unable to make these commitments. A shortage of money may have dictated that faculty concentrate on the teaching function to the exclusion of any desire they or the institution might have for research. Therefore, it is necessary to try to discover what institutions would wish to do if resources were available. Many things can be done by a research minded institution which are far lower in cost than those things discussed earlier. Some of these less costly, research-oriented activities will be discussed now, hopefully providing some insight into the real desires of all the responding institutions.

Released Time for Faculty Research

Releasing a faculty member from teaching or other duties for the purpose of conducting research does cost money. Since it is possible for a dean to establish the amount of released time which will be granted, costs can be held within some reasonable limits. Though a released time policy is not the least expensive method of encouraging faculty research, it is far less expensive than hiring full-time researchers. When asked whether they released faculty members from teaching or other duties in order that they might conduct research, the deans gave the replies shown in Table LIX. One hundred sixty-six respondents, representing 57%, did allow released time. A much greater proportion of the universities made this provision. Institutions in the "others" category followed behind with 67% compared to 80% of the universities. Liberal arts and teachers colleges both hovered close to 40% allowing released time.

TABLE LIX

FACULTY RELEASED FROM TEACHING FOR RESEARCH

Totals		Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	166	79	56	10	21
No	125	20	79	16	10
Total Responses	291	99	135	26	31

Closely allied to released time for research is the possibility of released time for a faculty member appointed to office in some national research association. Such an honor does not come easily and ought to be taken as testimoney to the recognized scholarship of the faculty member selected. If an institution feels that educational research is important, encouragement of faculty members thus selected is an excellent way of demonstrating interest. In order to obtain another measure of the degree of interest in research, the deans were asked what fraction of time, if any, would be released for duties and activities attendant upon a faculty member's appointment as a major office holder. The replies, organized into Table LX, indicate that only 230 institutions responded to this question. One hundred forty-eight institutions would grant released time, 82 would not, and 73 would not commit themselves.

TABLE LX

FACULTY TIME RELEASED IF
APPOINTED TO OFFICE IN
A NATIONAL RESEARCH
ASSOCIATION

Time Released	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	82	22	36	12	12
One Quarter	120	53	43	10	14
One Half	22	7	10	2	3
More	6	1	5	0	0
Total Responses	230	83	94	24	29

Faculty Sponsored Research Meetings

If a school of education is really short of money, and has been able to provide none of the resources discussed to this point, the possibility still exists for it to encourage research effort. By wisely investing a minimum number of dollars, an institution may obtain some time from a recognized expert who will come to the campus to speak to faculty and students about educational research. Furthermore, without expending any money it is possible to have an open seminar with faculty members to discuss the myriad aspects of research for the benefit of the student body. It is also possible to have experts from nearby visit the campus at absolutely no cost. There are many researchers dedicated enough to consider this an honor as well as a duty. The deans were asked whether the faculty had sponsored an open seminar, colloquium or talk on some aspect of educational research in the last year. Examination of Table LXI reveals that only 134 institutions were able to answer "Yes." This is poor testimony to interest in research, for it indicates that one of the most economical ways of increasing interest in research is definitely underutilized.

TABLE LXI

FACULTY SPONSORED OPEN RESEARCH SEMINAR IN LAST YEAR

	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	134	70	38	9	17
No	161	33	96	18	14
Total Responses	295	103	134	27	31

TABLE LXII

RESEARCH SEMINARS, COLLOQUIA OR SPEECHES SPONSORED IN THE LAST YEAR

Type of Institution Seminars Sponsored	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	163	35	95	18	15
1-3	82	40	29	2	11
4-10	29	16	6	3	4
11-25	10	6	2	1	1
26-50	2	2	0	0	0
51-72	1	1	0	0	0
Total Responses	287	100	132	24	31
Total Seminars	616	412	109	37	58
Mean Seminars	2.15	4.12	0.83	1.54	1.87
Median Seminars	0.00	1.00	0.00	0.00	1.00

When asked how many of these seminars, colloquia or talks had been sponsored during the last year, the deans' replies varied from none in 163 institutions to as many as 72 in one institution. University interest in research again appears higher; they reported a mean of more than four such meetings per year. This figure is more than double that reported by "others" and teachers colleges, and over four times that reported by liberal arts colleges.

Faculty Committees for Education Research

Though an institution may have no formal interest in educational research outside its walls, it would be wise to provide some organizational framework for self-study. The deans were asked how many faculty committees for educational research activities currently exist. They answered that no such committees existed in 115 institutions, and that 163 institutions possessed from one to seven committees. The mean for all institutions came to less than one committee, and even universities did not show up strongly in this area.

Lacking some organizational framework in which faculty committees might carry on research activities, it is difficult to perform significant self-study. A question asked was the extent to which the institution engaged in research studies of its own educational programs. From Table LXIV it can be seen that only 102 institutions engaged in self-study either regularly or frequently.

TABLE LXIII

FACULTY COMMITTEES FOR EDUCATIONAL RESEARCH ACTIVITIES

Type of Institution Faculty Committees	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
None	115	22	75	11	7
1-3	154	67	52	13	23
4-7	9	6	2	1	0
Total Responses	279	95	129	25	30
Total Committees	245	125	70	19	31
Mean Committees	0.88	1.32	0.54	0.76	1.03
Median Committees	1.00	1.00	0.00	1.00	1.00

TABLE LXIV

INTRA-INSTITUTIONAL RESEARCH STUDIES OF EDUCATIONAL PROGRAMS

Type of Institution Research Studies	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Never	8	2	4	1	1
Seldom	48	18	25	1	4
Occasionally	135	49	56	14	16
Regularly	97	32	47	8	10
Very Frequently	5	1	3	1	0
Total Responses	293	102	135	25	31

Table LXIV reveals that 191 institutions only occasionally, seldom or never invest the time and effort to study their own educational programs.

Major Problems Blocking Educational Research

By now the reader may have concluded that the major problem blocking research is a lack of interest on the part of institutions or faculty members. Rather than making this assumption, it would be wise to examine the problems which institutions feel stand in the way of their attempts to do educational research. A number of potential sources of trouble were selected and offered as alternatives which could be checked by the deans. In order to provide an open end to this question, a category called other problems was provided, and deans were asked to specify what these other problems were. Table LXV provides a breakdown of all the responses received. Since all responses total 293, it is possible for each problem area to have a total of 293 affirmative responses. Not every problem confronted every institution, and no one problem was perceived as a source of difficulty by all institutions. The most prevalent block to progress reported by the deans involved limitations on faculty time. Two hundred sixty-four institutions perceived this as a major problem. The problem area checked next most often was lack of research funds. Limitations in secretarial and clerical help and limitations in graduate student availability were third and fourth on the list. While these were selected far fewer times than the first two problem areas, still more than half the institutions found them to be blocks to research. Roughly one-third felt that limitations in faculty qualifications stood in the way of some research efforts. If the reader is shocked at this, he should recall the contention made in an earlier study that possession of a doctorate does not necessarily make an educational researcher. Unclear or poorly prepared research guide lines may have troubled those who sought funding for their projects, but in this study it seems to be a problem only for liberal arts colleges. Poor guidelines may lead to projects being turned down for what are considered by researchers to be unclear or unspecified reasons. Such was the case in only 59 institutions. Other problems in attempting research troubled 44 institutions, but many of these were so closely allied to the first seven on the list that they will not be considered separately.

Importance of the Research Function

An examination has been made in this study of two factors: what is being done in educational research by the institutions, and the potential research activity of which each feels itself to be capable. Some measures of interest in educational research have also been obtained.

TABLE LXV

MAJOR PROBLEMS CONFRONTED IN ATTEMPTING RESEARCH

Type of Institution Major Problems	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Unclear Research Guidelines	80	22	41	8	9
Limited Secretarial and Clerical Help	164	57	68	20	19
Limited Graduate Student Availability	161	52	71	18	20
Limitations in Faculty Qualifications	103	37	46	8	12
Limitations in Faculty Time	264	87	125	25	27
Proposals Turned Down for Unclear or Unspecified Reasons	59	28	19	2	10
Lack of Research Funds	227	82	97	25	23
Other Problems	44	14	15	5	10
Total Affirmative Responses to Each Problem	293	101	134	27	31

Now a value judgment made by the deans will be explored. Whether previous measures indicated institutional interest to be high or low, another important question still remains. Do institutions feel that they are giving sufficient weight to the educational research function? In reply to this query, ten out of eleven institutions said "No." Nor was there self-satisfaction demonstrated by any one of the four categories of institutions. Despite the demonstration of substantially greater commitment to educational research on the part of universities, even they felt that their efforts had been inadequate by a margin of almost nine to one.

TABLE LXVI

INSTITUTIONS GIVING SUFFICIENT WEIGHT TO EDUCATIONAL RESEARCH

Totals		Universities	Liberal Arts Colleges	Teachers Colleges	Others
Yes	26	11	12	2	1
No	266	92	119	25	30
Total Responses	292	103	131	27	31

Reasons for the Under Emphasis Upon Research

It is possible that some of the problems listed in Table LXV which now block attempts to do educational research may partly explain the insufficient weight given to the research function by schools of education. To ascertain if this might be the case, the deans who answered that insufficient weight was being placed upon research at their institutions were asked to write the number of the major reason from the preceding list. Two hundred-five did so. Again, the limitation on faculty time was most often checked, and it is interesting to note that lack of research funds fell far behind limitations on faculty time as a reason for the underemphasis upon research. Clearly, when asked to make one single choice, the deans felt obliged to choose the time element as the key. Recognizing that other conditions might be determining factors, the deans were offered four further alternatives for the insufficient weight given to the research function. At least two of these alternatives proved important and were checked by the deans. Some of the deans found these last four to include the major reasons, and while not checking any of the first eight alternatives chose to check one of these. In 99 institutions the deans stated that the teaching function was emphasized on philosophical grounds. While earlier sections of the questionnaire did not reveal that space seemed to be a critical factor, nevertheless, 43 institutions stated that one of the major reasons for underemphasis upon research was a limitation in physical facilities. Neither limitations in faculty qualifications nor

TABLE LXVII

MAJOR REASONS INSUFFICIENT WEIGHT IS GIVEN TO EDUCATIONAL RESEARCH FUNCTION

Type of Institution	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Unclear Research Guidelines	3	0	3	0	0
Limited Secretarial and Clerical Help	4	1	2	0	1
Limited Graduate Student Availability	4	2	1	0	1
Limitations in Faculty Qualifications	23	10	9	1	3
Limitations in Faculty Time	119	38	57	14	10
Proposals Turned Down for Unclear or Unspecified Reasons	3	1	1	0	1
Lack of Research Funds	36	15	15	3	3
Other Problems	13	3	4	2	4
Total Responses	205				
Teaching Emphasized on Philosophical Grounds	99	25	54	11	9
Physical Facilities Limited	43	22	15	4	2
Lack of Cooperation from Elementary and Secondary Schools	1	0	1	0	0
Faculty Uninterested in Doing Research	17	1	8	3	5
Total Other Responses	160	48	78	18	16

faculty disinterest seemed to be of great importance in determining the emphasis upon research, and all other factors seemed to be of minor impact.

Summary of Institutional Policies, Attitudes and Aspirations Concerning Educational Research

Institutional policies have permitted the faculty released time for research or for service in national research associations in comfortably more than half the institutions which replies. The fact that faculty salaries make up most of the budget in many institutions may explain why released time is not utilized to a greater extent. While funds may be limited, the need for faculty members continues to be greater, and faculty salaries continue to be an area of great budgetary concern. A far less costly policy which an institution might use to encourage interest in research is sponsorship of seminars, colloquia and speeches on various aspects of educational research. These have been quite definitely underutilized, and perhaps offer the major area for expansion in every category of institutions interested in further research activity. More faculty committees for educational research and institutional self-study could be used with minimum additional expense.

Major problems blocking research emphatically centered about faculty limitations in time and lack of research funds. By more than a ten to one margin the deans feel that their institutions were giving insufficient weight to research and that faculty time was a key factor. While in this case the lack of research funds was not a major determinant, an emphasis upon the teaching function on philosophical grounds did prove to be important.

Given additional funds, the deans might be able to hire extra faculty members thus providing extra faculty time for research. Quite possibly, many faculty members have been conducting research projects on their own time, but this activity was not a concern of the study. Only institutionally-sponsored research was investigated, and this seems to be carried on at a lower rate than is desirable. If research were conceived as a necessary concomitant to teaching, the dichotomy of teaching versus research might be resolved.

While a need for ever greater efforts in educational research is perceived, there is apparently no ground swell in this direction. Universities still carry the major part of the burden, with the category of "other" institutions just beginning to take up some of the slack.

VII. GENERAL AND SUPPLEMENTAL INFORMATION

The final schedule of the questionnaire posed four questions: two sought quantitative replies, and two were designed to obtain value judgments. With these four questions, an overview of the status of educational research in institutions of higher education across the nation becomes fairly complete. While more detail might be valuable in many cases, it will have to be reserved for future studies in greater depth.

Research Projects Currently Underway

In order to measure the institutions' quantitative involvement in research, the deans were asked how many research projects were currently underway in their departments of education. Since some projects are likely to be more extensive than others, and the duration of projects can serve as a measure of involvement, the deans were asked how many of the projects would be completed this year and how many would require one or more additional years to complete. Their responses to these three questions are entered in Table LXVIII. Theoretically, the total of the projects completed this year plus those requiring more than one year ought to equal the total of all projects underway. Since a number of institutions did not specify project duration, this is not the case. The deans reported 1,215 projects underway: 700 will be completed this year, 484 will require more than one year, and 31 were of unspecified duration. The mean number of projects underway in universities doubled the overall mean in every case. The category

TABLE LXVIII

RESEARCH PROJECTS CURRENTLY UNDERWAY IN DEPARTMENT OR SCHOOL OF EDUCATION

Type of Institution	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Total Projects Underway	1,215	963	104	48	100
Total Responses	283	97	130	25	31
Mean	4.29	9.93	0.80	1.92	3.23
Projects Completed This Year	700	564	52	34	50
Total Responses	270	96	121	23	30
Mean	2.59	5.88	0.43	1.48	1.67
Projects Requiring More than One Year	484	375	48	14	47
Total Responses	266	95	119	23	29
Mean	1.82	3.95	0.40	0.61	1.62
Project Duration Not Specified	31	24	4	0	3

"other" institutions was next with slightly more than one-tenth as many projects, which, when averaged over the number of institutions reporting, produced more than three per institution. The mean number of projects in teachers colleges was third highest, and though liberal arts colleges had more than twice as many projects as teachers colleges, there were substantially fewer per institution. Projects in all but teachers colleges appeared to be fairly well balanced between one year and longer term projects, with liberal arts colleges and "others" almost evenly divided.

Preferred Sources for Educational Research Funds

Moving from a measure of quantity to one requiring value judgments, the deans were asked from which sources they felt most additional educational research funds ought to come. The five sources mentioned earlier were again utilized. Just as institutions have been drawing most heavily upon the federal government for research money, and foresee the continuance of this practice, they now replied that the federal government was the source from which most educational research funds ought to come in the future. This source was chosen by a ratio of almost exactly two to one over institutional sources, which were next. The deans also felt that private foundations and individuals ought to furnish more of the added funds than state governments.

This may surprise some readers until they analyze Table LXIX and note that it was the liberal arts deans who caused the higher number of such replies. Since few liberal arts colleges are state supported, it is not unusual that they would expect little research funding from state sources. Federal government programs, on the other hand, have been designed to include liberal arts colleges. While state governments perceive only public higher education as their responsibility, the federal government has adopted a policy of supporting both public and private higher education in a number of ways. This is one major reason it is chosen by every institutional category as the source from which most additional educational research funds ought to come.

Priorities for Educational Research

The deans were asked to indicate the area which they would first investigate if more educational research funds were available. In responding to this question, more than half the deans reported that they would first investigate teacher education. While more university deans chose this topic than other topics, it was chosen in an even heavier proportion by the deans in the other three institutional categories. Well over half the deans in liberal arts colleges, teachers colleges, and "other" institutions chose this area as the first for study, while less than half the university deans agreed with them. The learning process

TABLE LXIX

SOURCES FROM WHICH MOST EDUCATIONAL RESEARCH FUNDS OUGHT TO COME

Type of Institution Sources	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Institution	55	16	29	4	6
Federal Government	109	45	43	9	12
State Government	40	13	10	7	10
Private Foundations and Individuals	48	14	32	2	0
Other Sources	2	1	0	1	0
Total Responses	254	89	114	23	28

appeared to concern a substantial number of university deans and a considerably smaller proportion of deans in the other categories of institutions. Studies of curriculum were placed third in rank, and only a small number of the institutions reported they would first investigate any of the three other topics. While many of the deans may have been troubled when asked to choose from among these topics, the final results indicate deep concern with the teacher educational process. This result is in keeping with earlier studies which reported that deans would first seek professors to teach rather than researchers, and with replies to the questionnaire indicating that limited faculty time was always of deep concern. The inference which can be drawn from Table LXX is that research areas which are difficult to measure quantitatively received top priority.

Developmental Research

This study contended earlier that research completed and lying dormant in files is nearly useless. Those who have been developing government research programs seem to acknowledge this contention, for they have specifically created Research and Development Centers, and have charged the centers with developmental and dissemination activities among their prime concerns. For the purposes of this study, developmental research was simply defined as the application

TABLE LXX

PRIORITIES ASSIGNED VARIOUS TOPICS FOR EDUCATIONAL RESEARCH

Type of Institution Topics First Investigated with More Research Money	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Learning Process	62	33	21	4	4
Curriculum	45	15	20	5	5
Teacher Education	152	40	84	12	16
School Reorganization	4	2	1	0	1
School Finance	3	2	0	0	1
Other	3	1	1	1	0

of research findings in the schools. When questioned about the extent to which their school or department of education was involved in developmental research, the deans replied as outlined in Table LXXI. No involvement was claimed by 128 institutions, about 44% of all which replied. One or two developmental projects were being carried on by 99 institutions, and from three to more than five projects were under way in 60 institutions. Universities reported involvement in more projects per institution than did any of the three other categories. The second greatest degree of involvement was in the "others" category. Forty-four percent of the teachers colleges were involved in one or more projects, and about 33% of the liberal arts colleges reported some involvement in developmental research projects. Sixteen schools did not respond to this question, which may indicate that they were not involved, though this assumption cannot be proven.

An earlier study referred to in Chapter II stated that educators do not lack respect for the results of educational research; they simply lack enough appropriate results. Perhaps Table LXXI also indicates that they lack developmental mechanisms for implementing research findings in the schools. If there are not enough appropriate results available, the number of schools now involved in developmental research may be sufficient. If, on the other hand,

TABLE LXXI

EXTENT TO WHICH SCHOOLS AND DEPARTMENTS OF EDUCATION ARE INVOLVED IN DEVELOPMENTAL RESEARCH

Type of Institution	Totals	Universities	Liberal Arts Colleges	Teachers Colleges	Others
Presently not Involved	128	18	89	14	7
One or Two Projects	99	38	37	8	16
Three to Five Projects	34	21	5	3	5
More than Five Projects	26	22	1	0	3
Total Responses	287	99	132	25	31

recent large investments in educational research result in a substantial increase in research findings which ought to be made available, then the 159 institutions reporting developmental research projects will definitely be overextending themselves by attempting to carry the entire burden.

Summary of General and Supplemental Information

The total number of research projects under way in schools of education which did not involve cooperation with other departments was 1,215. Of these 700 were planned for completion during this year, and the balance would require more than one year or were of unspecified duration. Projects completed this year were found to predominate in universities and teachers colleges; in the remaining two categories the longer term projects accounted for about half the total.

Quite emphatically the deans felt that most additional educational research funds ought to come from the federal government, followed by institutional sources which were chosen by almost exactly half as many deans. The number of deans who chose state, private and other sources, was less in each case than those who specified institutional sources. Even when the three sources are combined, more deans chose federal sources.

In assigning priorities to various research topics, the deans gave preference to teacher education, with substantially fewer choosing learning process and curriculum in that order.

Slightly more than half the institutions queried reported involvement in development research. Not quite 10%, most of these universities, reported that they were carrying on more than five developmental research projects. Of those who were at all involved, most had only one or two projects. Referring back to Table LXVIII, and comparing it with Table LXXI, the ratio of all research projects in schools of education to developmental projects is about four to one. Hopefully, the future will witness a higher proportion of research projects which produce results worthy of and directed toward application in the schools. Whether positive or negative findings are made, research results can still be of substantial benefit in guiding the development of quality educational programs in the schools.

CHAPTER V

I. SUMMARY

This study was concerned with an analysis of the faculty, funds and facilities which institutions of higher education have committed to educational research, and with the estimated potential future commitment of these resources.

A questionnaire was sent to each of the 727 members of AACTE for completion by the dean of each school or department of education. In addition to gathering institutional data regarding type, size, location and accreditation, six major topics were investigated. They were:

1. Human Resources for Educational Research
2. Physical Facilities Resources for Educational Research
3. Financial Resources for Educational Research
4. Interdisciplinary Resources for Educational Research
5. Institutional Policies, Attitudes and Aspirations Concerning Educational Research
6. General and Supplemental Information

Three hundred-three responses to the survey instrument were received, coded for computer analysis, and the results subjected to study. Upon examination, the data gathered tended to confirm the findings of Sieber that educational research is at present a loosely organized, low status activity of less than prime concern to both deans and faculties of schools of education. The scarcity of research training programs, the limited opportunity for graduate students to participate in research projects, and the lack of thorough interdisciplinary cooperation suggested by Buswell were also confirmed.

No relief is seen from the critical shortage of educational researchers projected by Clark. Although respondents claimed more than double the number of training programs for educational researchers noted by Clark, most of these must be considered of a limited nature on the basis of other questionnaire responses.

Contrary to Stanley's contention, respondents reported that school systems were generally cooperative toward their research efforts.

Other noteworthy findings include the following:

1. Qualified educational researchers comprise only 22% of all education faculty members.

2. About 17% of all faculty members also hold membership in research associations.

3. Only limited numbers of faculty members will be hired with educational research assigned as their principal function.

4. Only 749 faculty members were reported affiliated with government research centers, an average of two and one-half per respondent institution.

5. Fewer than one-fifth of the institutions not now training educational researchers reported future plans to do so.

6. Substantial space is still available though not now committed to educational research.

7. While electronic data processing is in general use by educational researchers, more than half the responding liberal arts colleges and teachers colleges did not have a computer on-campus.

8. About one-third of the respondents reported a laboratory school on-campus, with an average of slightly more than two research projects per laboratory school performed during the last year.

9. Research arrangements with school systems off-campus have been made by more than half of the respondents. An average of more than three research projects have been performed in them during the last year.

10. Shortages both of faculty and funds pose serious blocks to granting research assistance to school systems requesting help.

11. Most institutions found it difficult to provide a precise analysis of income and expenditures for research.

12. The federal government has provided, and probably will continue to be asked for, the largest percentage of educational research funds by all types of institutions.

13. More than half of the respondents budgeted nothing specifically for educational research.

14. A mean expenditure of 23.62% of the research budget is devoted to faculty salaries, while a mean of 8.29% is expended for administrative, secretarial and clerical help.

15. Plans to expand the financial base for educational research are foreseen by half the respondents.

16. Interdisciplinary efforts are evident, but more programs of educational research are being done by other departments separately from schools of education than are being done jointly with them.

17. Fifty-seven percent of the respondents allowed released time for faculty research, while less than half would grant it for service in a position of responsibility in a national research association.

18. Insufficient use is being made of low cost methods of encouraging research interest.

19. Insufficient provisions exist for faculty research committee structures in most institutions responding.

20. One hundred ninety-one respondents occasionally, seldom or never study their own educational programs.

21. The most prevalent block to research activity was reported to be limitations on faculty time; next was a lack of research funds.

22. In 91.1% of the respondent institutions, it was felt that insufficient weight was given to the research function, and that limitations on faculty time were the major reason for this situation.

23. Respondents reported an average of more than four research projects presently under way in schools of education; averages of less than one project per respondent are being done separately by other departments, or jointly by them with schools of education.

24. Priorities assigned research topics by deans indicate major concern with teacher education, learning processes and curriculum studies in that order.

25. Developmental research projects were being carried on by 55.4% of the responding institutions.

Findings of a more general nature indicated that universities demonstrate the greatest research capability and substantially the highest commitment in each of the major areas of inquiry. Their plans for the future were most extensive, and their interest in research was demonstrably highest among the four institutional types on nearly every measure.

Liberal arts colleges report the lowest commitment of research resources, show least interest in research activities and plan for little expansion in the near future. Though most numerous of all the institutional types, their generally smaller size, limited faculties and space, and disinterest in educational research combined to place them lowest on most measures, both in total and on the average.

Teachers colleges and "others" each give occasional indications of unused potential. Mobilization of latent resources might be costly in these two types of institutions, but future needs may dictate such a course of action. The philosophical emphasis upon teaching evident in many of them suggests that the teaching versus research dichotomy must be resolved--the functions must come to be seen as complementary.

II. CONCLUSIONS

The data gathered during this study definitely led to one major conclusion. Far too little educational research is being done by all institutions of higher education. Too few faculty members are prepared for and involved in research. Far too small a percentage of school of education budgets has been committed to research activity, and support for research training and projects in smaller institutions has been inadequate.

Part of the problem may well lie in acceptance by educational administrators, professors and institutional boards of the present situation in which funds for research are so limited. There is vital need to break with past traditions which have placed research at a low point on the priority list. The non-research philosophy held by liberal arts colleges, teachers colleges and some state universities must be eliminated. If improvements are to be made in the educational process, certainly the most complex activity of man, then truly vast resources must be committed to the effort.

It is also time to cease viewing educational research in the limited context of the laboratory or the confines of the university. Resources should be developed and used wherever they exist. Certainly for the purposes of this study research was carefully defined and delimited. This may well indicate where part of the problem lies. Too many such limitations have been placed on research with the result that many potentially useful projects were never begun because they failed to meet some traditional criterion. Talented people outside universities have been discouraged from attempting research because they were somehow convinced that they lacked the proper environment, the respectability of a position in higher education or the prestige of a particular advanced academic degree.

Other studies have found, and this one has confirmed, that research has been held in low esteem in most educational institutions. The practice of education, teaching in the classroom or administration, is too often viewed as a more desirable alternative by those in authority. Something resembling a national crusade is necessary to remind everyone that no real teaching can occur until research in its broadest sense has been done.

Trained researchers are critically scarce. What compounds this tragedy is that there are now great numbers of teachers at all levels who could become qualified researchers through the use of special training programs similar to the N.S.F. Summer Institutes. While only 22 percent of college faculty members have been rated as qualified educational researchers by their deans, what stands in the way of a tremendous effort on a national scale to further train the other 78 percent. Going beyond the college level, thousands of well trained teachers and administrators in elementary schools, high schools, and state departments represent even more potential human resources which could be developed with relatively minimal monetary outlays. The institute program worked well for developing P.S.S.C. physics teachers. There is no reason why a somewhat more extensive program could not be used to develop educational researchers.

State departments of public instruction have been involved only slightly in educational research. Here again past traditions have enchained our system. Why must state legislatures be allowed to be so conservative that their states actually may be losing untold millions of dollars which research could have saved? A need for extensive efforts to mobilize legislative action at the state level is indicated. Properly trained state department personnel could do much to encourage this action. The federal government has moved in to support state and local governments in many areas where these agencies have progressed too slowly. It seems that the states are content to let the federal government do even more each passing year. Concerted action by educators is needed now to move their state legislatures into the funding of research. There can no longer be an acceptance of state level inaction on educational matters, for these are the most important activities reserved to the states under the American system of government.

Universities have been the focal point for most educational research activities in the past. While they may and should continue to be lighthouses for research, there is no reason why all educational research activity must be confined to them in the future. Pilot programs sponsored by both federal and state governments might give teachers colleges, liberal arts colleges and state colleges a chance to become deeply involved in research. Given the freer hand which increased funds would bring, they might produce significant research, or at the worst, proceed to confirm that smaller institutions are not capable of doing educational research. Either result is worthwhile, for an indication of the potential research productivity of these institutions would be gained.

Business and industry have provided support for educational research through foundation grants. There is reason to believe that these sources can offer even more financial assistance to research in the future. It is certainly recommended that they be encouraged to do so at every reasonable opportunity.

These conclusions have been broadly stated and purposefully so. The topic studied has been one of great proportions, requiring a broad and extended outlook. This does not mean that specific recommendations cannot be made. They can be, and a number of alternatives are offered in the following section.

III. RECOMMENDATIONS

The improvement and expansion of educational research will require a major commitment of resources by all agencies and institutions at every level of educational endeavor.

Expanding Federal Leadership and Support

Because the federal government has recently been a major force in the sponsorship and funding of educational research, it offers an excellent starting point for these recommendations.

Until now, federal money devoted to research in education was measured in tens of millions of dollars. On the other hand, federal investments in space exploration have involved tens of billions of dollars. It does not seem presumptuous to suggest that progress in education is equally as vital as progress in space exploration. No suggestion of discontinuing the space program in order to support educational research will be offered. Rather the point to be made by this comparison is that our nation is capable of investing tremendous resources in support of programs which its citizens feel are important.

The possibility of expending ten or fifteen times more federal money on research than is currently being spent almost staggers the imagination, yet it is well within the capabilities of the United States to do so. The total estimated expenditures for public elementary and secondary education in 1964-65 were about $23 billion; for all institutions of higher education, both public and private, estimated expenditures in 1963-64 totaled more than $9 billion.[1] Progress in educational research could be accelerated almost beyond measure if the federal government would appropriate each year for research a sum equal to just 5 percent of this $32 billion expenditure. This percentage is not unrealistic, for business annually commits a similar percentage to research activities. One and a half billion dollars could be invested in research efforts, in part for research grants and contracts, and partly for the training of researchers. Matching requirements for a portion of federal funds would encourage institutions to increase their commitments, a situation which may be desirable in some cases.

Furthermore, projects of a number of years duration could be financed, larger numbers of pilot programs of every description would become possible, smaller institutions would be able to obtain research funds and research as an activity would gain the stature it deserves. Research and Development Centers would no longer languish for want of funds. Regional Laboratories could marshal resources, provide research assistance, promote seminars and workshops, and quite possibly be the foci for the research institutes mentioned earlier.

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[1] U.S. Department of Health, Education and Welfare, Digest of Educational Statistics: 1965. Washington, D.C., U.S. Government Printing Office, 1965, p. 58 and p. 103.

Worthy projects now evaluated and turned down by the federal government for lack of funds might be improved to the point of real value by staffs of competent government consultants who now lack time to give much more than a yes or no decision. Many worthwhile ideas which now flounder because institutions lack developmental personnel might be rescued. An expansion of the existing federal programs of developmental assistance for non-involved institutions is warranted.

For these reasons, it is recommended that the federal government make a firm commitment of at least $1,500,000,000 annually for educational research programs, projects and training.

Expanding Institutional Involvement

Colleges and universities need not wait for action by the federal government to strengthen research efforts. There are many things which they can do, a few of which are suggested here.

A beginning must be made toward development of training programs for researchers pending the day when these can be adequately financed. A number of institutions now possess enough convertible resources in terms of space and equipment that a small investment of money for professional and secretarial time would permit development of at least limited training programs. Summer institutes and workshops would be an excellent starting point, and could be expanded into year-round programs as more money becomes available.

It has been shown that seminars and colloquia have been too seldom utilized. They offer excellent opportunities for encouraging research while funds are still limited, and may serve to increase interest to the point where full-time programs are perceived as a real necessity.

Small amounts of money invested in the support of graduate students to assist faculty researchers can pay fine long-term dividends. As stated in the Buswell study, described in Chapter II, this involvement is closely associated with later productivity as a researcher.

Universities may make excellent contributions to research by offering their faculties and facilities as focal points for the efforts of less research oriented institutions nearby. By combining efforts, a group of institutions may attack and conquer research problems which would overwhelm them individually.

Laboratory schools offer another example of resources not now fully employed. These specialized educational laboratories offer an immediate and accessible arena for research activities. That they have not been fully employed by researchers is unfortunate, and a recommendation is warranted that concerted efforts be made immediately to utilize them to the fullest extent.

It is recommended further that several institutions begin pilot programs for training school research personnel along the lines suggested by Stanley and briefly described in Chapter II.

Expanding Faculty Resources

From the deans and faculties of the schools of education must come much of the drive for greater efforts in research. These professionals hold positions of respect from which they can command attention. Under their leadership, teachers and administrators from all educational levels can mobilize a drive for the expansion of research which is so clearly needed.

Again, there is no need to wait for Congressional appropriations, national leadership or even state assistance. A number of avenues are open to research progress, some of which are suggested here.

Interdisciplinary efforts have been very limited, and have often been interdisciplinary in name only. Other departments are conducting educational research without cooperation from schools of education, and often the reverse is also true. Educational research lends itself to team efforts by subject matter specialists, psychologists, sociologists and educationists. The complexity of the educational process, in fact, demands such efforts. Deans and faculties of education must necessarily take the lead to develop the interdisciplinary approach, for they are those directly involved. Nor is it wise to avoid the assistance of elementary and secondary teachers and administrators who are daily involved with children learning. In this sense, interdisciplinary efforts may be thought of as both horizontal and vertical in nature--interdepartmental and involving several educational levels. Immediately accessible are specialists from state departments and the business world whose expertise can further expand interdisciplinary efforts.

A question of priority arises when funds are budgeted. It is vital that schools of education provide reasonable funds for research from their budgets. This study revealed that the four institutional categories averaged from slightly more than 1 percent to almost 10 percent of the school of education budget set aside for research. It is recommended that as much as 40 percent of the budget be devoted to educational research by every school of education in the nation, a figure approached by only two or three of the major universities. This commitment should provide a good base for research, and inspire greater governmental investments as well. Joint efforts by both deans and faculties can make this figure become a reality instead of the dream it now so often is.

General Recommendations

Too often research has been considered the private domain of institutions of higher education. A broadening of the definition of acceptable educational research is required, one which will give recognition to those activities condescendingly referred to as action research. Properly trained teachers can conduct worthwhile research in their classrooms, and when their research is of sufficient quality to warrant it, should be considered for federal, state or foundation support.

Educational public relations programs have not been notably successful in the past. It has been contended that educational efforts have only been spurred to higher levels in this country by a series of crises upon which educators and their supporters in the Congress have been able to capitalize. Without such crises, (i.e., Sputnik, the Depression, World War II's returning G.I.'s) education might well have been comfortably ignored. Now a monumental educational public relations program is needed for there is a crises. It is unfortunately one which is nearly invisible to the average citizen. Our lack of concerted research efforts has produced visible symptoms, and these are the things being treated by much of the current legislation. Operation Headstart, for example, might have been unnecessary had research been done on a broad scale twenty years ago. It is impossible to recommend strongly enough that this nation be alerted to its need for educational research and researchers now.

Finally, several recommendations of a very limited nature which bear directly upon this study are in order. The replies have made it clear that budgetary systems in higher education do not presently permit easy financial comparisons to be made. Research aimed at developing clear-cut, consistent budgetary formats for colleges and universities appears necessary and is hereby recommended.

The design of this study did not provide for personal interviews to supplement the questionnaires, a technique which would permit more penetrating analyses to be made of the reasons for the present status of research in respondent institutions. A similar study using supplementary interviews is recommended.

While it is recognized that repetition might cause this data gathering to become onerous to deans, the vital nature of research needs mandates that studies similar to this one be conducted every two or three years. One improvement to be recommended is investigation of the reasons why many institutions choose not to reply. Such replications with the improvements suggested can help to determine whether changes have occurred which warrant rechanneling of research resources or additional resource allocations.

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NORTHWESTERN UNIVERSITY
EVANSTON, ILLINOIS 60201

THE SCHOOL OF EDUCATION

Dear Dean:

Dr. Lindley J. Stiles and I are now conducting a nationwide survey of more than 700 colleges and universities to ascertain "The Educational Research Involvement and Capabilities of Institutions for Teacher Education." Our immediate purpose is to determine if present resources can be expanded beyond their current commitment to educational research, and if untapped resources exist. A longer range objective is to provide information to members of Congress concerning the status of educational research so that they may make better-informed judgments about additional support for institutions not heavily involved in research at the present time.

Your cooperation will be greatly appreciated. The time you take from your busy schedule to help us now will make it possible to present this information at the next session of Congress.

While many questions are of a purely factual nature and are not complex to answer, some questions require value judgments or estimates. Your judgment on these will be completely satisfactory.

All requested information pertains to the department or school of education, with the logical exception of the section on interdisciplinary resources and the sheet for coding institutional information.

All replies will be considered confidential. Our final report will not identify individual schools with any replies which might be of a sensitive nature. Tabular listings will generally be by geographic area or institutional types as groups.

We hope to have your reply by January 16, 1967 so that this great mass of data can be analyzed and interpreted in time to accomplish our goals.

Where you find it impossible to answer a question in the manner we have requested, please comment on the margin or back of the questionnaire.

Sincerely yours,

Lindley J Stiles

Lindley J. Stiles
Professor of Education for
Interdisciplinary Studies

Richard J. Puffer

Richard J. Puffer
Research Assistant

LJS-RJP:jd
Enclosures.

THE EDUCATIONAL RESEARCH INVOLVEMENT AND CAPABILITIES OF INSTITUTIONS FOR TEACHER EDUCATION

Survey Questionnaire

Contents

Institutional Data
Schedule I: Human Resources for Educational Research
Schedule II: Physical Facilities Resources for Educational Research
Schedule III: Financial Resources for Educational Research
Schedule IV: Interdisciplinary Resources for Educational Research
Schedule V: Institution Policies, Attitudes and Aspirations Concerning Educational Research
Schedule VI: General and Supplemental Information

Name of Institution____

Address____

____

____

Enter Number
Which Applies

I. College or University Type

1. University
2. Liberal Arts College
3. Teachers College _____

II. Location

1. Maine, N.H., Vt., Mass., R.I., Conn.
2. N.Y., N.J., Del., Md., Va., W. Va., Penna.
3. Ill., Ind., Mich., Minn., Ohio, Wis.
4. Kan., Neb., N. Dak., S. Dak., Mo., Iowa
5. N.C., S.C., Ga., Fla., Ala., Miss., Tenn., Ky., Ark., La.
6. New Mex., Ariz., Tex., Okla.
7. Mont., Idaho, Wyo., Colo., Utah, Nev.
8. Alaska, Cal., Hawaii, Ore., Wash. _____

III. Size of Enrollment of University or College

1. Less than 500
2. 500 to 999
3. 1,000 to 1,999
4. 2,000 to 4,999
5. 5,000 to 9,999
6. 10,000 and more _____

IV. Accreditation and/or Recognition Status

1. Accredited by regional association
2. State recognized teacher training and certification
3. Both of the above _____

Schedule I

Survey Area: Human Resources for Educational Research

Purpose: To obtain up-to-date information on the present use of the institutions' human resources for research and data on the available human resources which could be used in the future for research activities.

(Responses should be made with reference to the current fiscal year)

Question	Response
1.0 Total number of faculty on your budget:	1.0______
1.1 If your budget is designed to permit such a breakdown, enter the number of faculty budgeted for each category below:	
1.11 Full-time research	1.11_____
1.12 Part-time research	1.12_____
1.13 Number of faculty full-time equivalent budgeted for research. (Combines 1.11 and 1.12 above.)*	
1.2 If your budget does not provide for separation of instructional salaries from research salaries, please give a careful estimate of the full-time equivalent of time spent by your faculty in research activities during normal working hours. Ignore personal research done during their own free time. (Your answer should be expressed in terms of the number of faculty members. Twelve faculty members spending part of their time in research may be the equivalent of two, three or four full-time faculty, etc.)	1.2_____
2.0 Total number of administrative, secretarial and clerical employees on your budget:	2.0_____

---

* Note: Half time or part-time in terms of hours may be nebulous in the case of faculty members since their schedules vary from day to day. We will rely on your own best judgement in this case.

2.1 Of these,employees, how many are full-time and budgeted for:
  2.11 Full-time research — 2.11_____
  2.12 Part time research — 2.12_____
2.2 How many are part-time and budgeted:
  2.21 Wholly for research — 2.21_____
  2.22 Partly for research — 2.22_____
2.3 If your budget does not provide for the breakdown required above, please give a careful estimate of the full-time equivalent of time spent on research work by administrative, secretarial and clerical employees. — 2.3_____

(Your answer should be expressed in terms of the number of employees Six employees spending part of their time on research work may be the equivalent of one full-time employee, etc.)

3.0 Total number of students employed on research work: — 3.0_____
  3.1 Graduate students — 3.1_____
  3.2 Undergraduate students — 3.2_____

4.0 How many of the faculty hold membership in some professional research association? — 4.0_____

5.0 How many faculty members hold some committee or office in a research association — 5.0_____

6.0 Do you now have a program for the development of young faculty members as educational researchers? — 6.0 yes no (circle)

  6.1 If not, are you planning such a program? — 6.1 yes no (circle)

7.0 Do you plan, within the next year, to hire additional faculty members whose principal function will be educational research? — 7.0 yes no (circle)

  7.1 Number of faculty to be hired for full-time research. — 7.1_____
  7.2 Number of faculty to be hired for part-time research. — 7.2_____

Schedule I (continued)

8.0 How many faculty members are currently affiliated with regional research laboratories? 8.0______

9.0 How many faculty members are currently affiliated with research and development centers? 9.0______

10.0 For the purposes of this survey, an educational researcher is defined as a person who has conducted research, the results of which have been disseminated through appropriate professional channels, e.g., books, monographs, journals or other types of mass media. The research must be of more than local concern and contribute to the sum of knowledge in education. Opinions or reviews of the work of others are not considered research. Philosophical and theoretical studies may be considered research if new concepts or models are developed or existing ones expanded and improved. This definition recognizes research which develops or validates measuring instruments, techniques, courses of study, guidelines or evaluative criteria. Surveys should include suggestions for new approaches, directions or goals. Ideally, research permits the testing of hypotheses and the drawing of inferences from valid data.. Applying these criteria, how many members of your faculty can be considered qualified as educational researchers? 10.0______

Schedule II

Survey Area: Physical Facilities for Educational Research

Purpose: To obtain up-to-date data on the physical facilities presently used in connection with research work and physical resources which could be used in the future for research activities.

(Responses should be made with reference to the current academic year)

Question	Response
1.0 How many high speed computers are in operation on your campus?	1.0 ______
1.1 How many on-campus computers are presently available to your staff and students?	1.1 ______
1.2 On how many research projects has your faculty used these computers in the last year?	1.2 ______
1.3 Do your plan to arrange the availability of more computers to staff and students?	1.3 yes no (circle)
2.0 Does your institution operate an on-campus school?	2.0 yes no (circle)
2.1 Elementary	2.1 yes no
2.2 Secondary	2.2 yes no
2.3 How many research projects has your faculty conducted in on-campus schools last year?	2.3 ______
3.0 Do you have arrangements with school systems off-campus for conducting research projects?	3.0 yes no (circle)
3.1 How many research projects has your faculty conducted in the off-campus school systems in the last year?	3.1 ______
3.2 In the last year, have you been forced to refuse requests for research help from off-campus school systems because of a shortage of funds?	3.2 yes no (circle)
3.3 Have you been forced to refuse such requests in the last year because of a shortage of faculty?	3.3 yes no (circle)

Schedule II (continued)

4.0 What approximate percentage of your present building space is assigned to research work? 4.0______%

4.1 What approximate percentage of your present building space could be assigned for research work which is not now so assigned? 4.1______%

5.0 Do you have a building program underway for your department? 5.0 yes no (circle)

5.1 What approximate percentage of the new building will be devoted to research work? 5.1______%

Schedule III

Survey Area: Financial Resources for Educational Research

Purpose: To obtain up-to-date information on the financial resources currently committed to research activities, the source of these resources, and the source of future commitments.

(Response will be made with reference to the current fiscal year)

Question		Response
1.0	What percentage of your total (school or department of education) budget is devoted to educational research?	______%
2.0	Within your educational research budget, from what sources and in what approximate percentages do you obtain funds for research?	
	2.1 Institutional sources	______%
	2.2 Federal sources	______%
	2.3 State sources	______%
	2.4 Private sources-Foundations and Individuals	______%
	2.5 Other______________________ (specify)	______%
3.0	Again, within your educational research budget, for what functions and in what approximate percentages do you expend funds for research?	
	3.1 For faculty Salaries	______%
	3.2 For administrative and secretarial staff	______%
	3.3 For Consultants	______%
	3.4 For Equipment	______%
	3.5 For Facilities	______%
	3.6 For Related Services	______%
	3.7 For Student Research Assistantships	______%
	3.8 Other__________________________ (specify)	______%
4.0	What amount of departmental funds is expended for travel to research conferences by faculty members?	$______
5.0	What amount of department funds is expended for travel to public or private agencies to discuss research proposals and negotiations?	$______

Schedule III (continued)

6.0 Do your plan to expand your financial base for research during the next year? 6.0 yes no
(circle)

6.1 From what sources will additional funds be obtained and what percentage of the total increase is projected from each?

6.11 Institutional Sources ______%
6.12 Federal Sources ______%
6.13 State Sources ______%
6.14 Private Sources ______%
6.15 Other Sources ______%

Schedule IV

Survey Area: Interdisciplinary Resources for Educational Research

Purpose: To obtain up-to-date information on the formation and operation of interdisciplinary resources which are being used in the pursuit of educational research or such resources which could be available for such uses.

Question	Response
1.0 How many of your faculty hold a joint appointment in one or more other departments or disciplines?	
1.1 One other department/discipline.	1.1______ (number)
1.2 Two other departments/disciplines.	1.2______ (number)
1.3 Three or more other departments/disciplines	1.3______ (number)
2.0 How many faculty members of other departments or disciplines hold a joint appointment in your department or discipline?	2.0______ (total)
3.0 Does your budget include salaries and/or other support for faculty members in other departments or disciplines?	3.0 yes no (circle)
3.1 If so, how many are thus supported?	3.1_____ (number)
4.0 Do other disciplines or departments in your university now have programs in educational research?	4.0 yes no (circle)
4.1 Specify which (see attached list for number codes)	4.1____________ (code numbers)
4.2 How many are jointly with your department?	4.2________
4.3 How many are separate from your department?	4.3________

CODING FOR SCHEDULE IV QUESTION 4.1

Code Number	Department Name or Discipline
1	Anthropology
2	Art
3	Biology
4	Business
5	Chemistry
6	Engineering
7	English
8	Geography
9	Geology
10	German
11	History
12	Journalism
13	Mathematics
14	Music
15	Philosophy
16	Physics
17	Political Science
18	Psychology
19	Romance Languages
20	Sociology
21	Speech
22	Other

Schedule V

Survey Area: Policies, Attitudes and Aspirations of the Institution toward Educational Research

Purpose: To obtain up-to-date information on the institutions' attitudes and aspirations toward research.

______________________________ : ______________________________

____

Question	Response
1.0 Are faculty members released from teaching or other duties for the purpose of conducting research?	1.0 yes no (circle)
2.0 If a faculty member were to be appointed as a major office holder in a national association committed to research, what fraction of his time, if any, would be released for attendant duties and activities?	
2.1 None	2.1______
2.2 One quarter	2.2______
2.3 One half	2.3______
2.4 More	2.4______ (check one)
3.0 Has your faculty sponsored an open seminar, colloquim or talk on some aspect of educational research in the last year?	3.0 yes no (circle)
3.1 How many times?	3.1______
4.0 How many faculty committees for educational research activities currently exist?	4.0______ (total)
5.0 To what extent does your institution engage in research studies of its own educational programs?	(check one)
5.1 Never	5.1______
5.2 Seldom	5.2______
5.3 Occasionally	5.3______
5.4 Regularly	5.4______
5.5 Very frequently	5.5______

Schedule V (continued)

6.0 What are the major problems confronted by your institution in attempting research? (Check those which apply)

6.1 Lack of clear guidelines for preparing proposals to funding agencies 6.1_____
6.2 Limitations in secretarial and clerical help 6.2_____
6.3 Limitations in graduate student availability 6.3_____
6.4 Limitations in faculty qualifications for educational research 6.4_____
6.5 Limitations in faculty time for educational research projects 6.5_____
6.6 Research proposals turned down for unclear or unspecified reasons 6.6_____
6.7 Lack of research funds 6.7_____
6.8 Other problems (specify)____________ 6.8_____
____

7.0 In view of the need for knowlege and the efforts being made to improve schools, do you feel your institution gives sufficient weight to the educational research function? 7.0 yes no (circle) (one only)

7.1 If your answer is "no" for 7.0, write the number of the major reason from the list given in 6.0, above. 7.1_____

7.2 If none of these reasons fully explains the insufficient weight given the research function by your institution, check one of the following: (one only)
  7.21 Our institution emphasizes the teaching function on philosophical grounds 7.21_____
  7.22 Our physical facilities are limited 7.22_____
  7.23 We have difficulty obtaining cooperation from elementary and secondary schools 7.23_____
  7.24 Faculty members are not interested in doing research 7.24_____

Schedule VI

Survey Area: General and Supplemental Information

Purpose: To obtain up-to-date information on current educational research programs and projects in which your institution is engaged.

Question	Response
1.0 How many research projects are currently underway in your department? Do not include projects from Schedule IV.	1.0______
1.1 How many of these will be completed this year?	1.1______
1.2 How many of these will require one or more additional years to complete?	1.2______
2.0 From what sources do you feel most additional educational research funds ought to come?	(check one only)
2.1 Institutional Sources	2.1______
2.2 Federal Sources	2.2______
2.3 State Sources	2.3______
2.4 Private Sources- Foundations and Individuals	2.4______
2.5 Other	2.5______
3.0 If more funds for educational research were available, indicate the area from the following list which you would first investigate.	(check one)
3.1 Learning Process	3.1______
3.2 Curriculum	3.2______
3.3 Teacher Education	3.3______
3.4 School Reorganization	3.4______
3.5 School Finance	3.5______
3.6 Other	3.6______
4.0 To what extent is your department involved in developmental research, that is, the application of research findings in the schools?	(check one)
4.1 Presently not involved	4.1______
4.2 One or two projects	4.2______
4.3 Three to five projects	4.3______
4.4 More than five projects	4.4______